

STATE OF CALIFORNIA

SENATE SELECT COMMITTEE TO INVESTIGATE  
PRICE MANIPULATION OF THE WHOLESALE ENERGY MARKET

OVERVIEW OF INVESTIGATIONS, STUDIES, AND  
REPORTS REGARDING THE ENERGY CRISIS

STATE CAPITOL  
ROOM 2040  
SACRAMENTO, CALIFORNIA

WEDNESDAY, APRIL 18, 2001

2:10 P.M.

Reported by:

Evelyn J. Mizak  
Shorthand Reporter

APPEARANCES

MEMBERS PRESENT

SENATOR JOSEPH DUNN, Chair

SENATOR DEBRA BOWEN

SENATOR WES CHESBRO

SENATOR MARTHA ESCUTIA

SENATOR MAURICE JOHANNESSEN

SENATOR SHEILA KUEHL

SENATOR WILLIAM MORROW

SENATOR BYRON SHER

STAFF PRESENT

IRMA MORALES, Committee Assistant

JONATHON WOFFORD, Committee Assistant

ALEXANDRA MONTGOMERY, Committee Consultant

RONDA PASCHAL, Committee Consultant

WADE TEASDALE, Chief of Staff to SENATOR MORROW

ALSO PRESENT

LT. GOVERNOR CRUZ BUSTAMONTE

ASSEMBLY MEMBER BARBARA MATTHEWS

SENATOR STEVE PEACE

SENATOR JACKIE SPEIER

FRANK A. WOLAK, Ph.D., Chairman  
Market Surveillance Committee  
California Independent System Operator Corporation

JUDYANNE MCGINLEY, Deputy Legislative Counsel  
Office of Legislative Counsel

INDEX

	<u>Page</u>
Proceedings .....	1
Opening Statement by CHAIRMAN DUNN.....	1
Opening Comments by SENATOR KUEHL.....	2
Opening Comments by SENATOR ESCUTIA .....	5
Statements by CHAIRMAN DUNN re:	
Purpose of Hearing.....	6
Role of Committee.....	6
Different Sides of Problem.....	6
Opening Comments by LT. GOVERNOR BUSTAMONTE .....	7
Testimony of FRANK A. WOLAK, Ph.D., Chairman Market Surveillance Committee California Independent System Operator Corp. ....	9
Background and Experience .....	10
Questions by CHAIRMAN DUNN re:	
Service on Market Surveillance Committee (MSC).....	11
Market Analysis Committee of ISO .....	11
First Report of MSC.....	12
Definition of Terms .....	13
Summary of Analysis of August '98 Report.....	14
Definition of Market Power .....	14
Questions by SENATOR MORROW re:	
Necessity for Deliberate Action in Meeting Definition of Market Power .....	15

Artificially High Prices .....	16
Involvement of Violations of Rules, Regulations or Law.....	16
Unilateral Exercise of Market Power And Violation of Anti-trust Law .....	16
Questions by CHAIRMAN DUNN re:	
Existence of Market Power to One's Ability to Access Market-based Regulation from FERC .....	17
Questions by SENATOR KUEHL re:	
Inherent Conflict between Market Power And Setting Market-based Rates .....	18
Questions by SENATOR PEACE re:	
FERC Standard of Exercise of Market Power Versus Anti-trust Standards .....	20
FERC's only Methodology for Investigations Was Simultaneous Ownership of Generation And Transmission.....	20
FERC's 1995 Insistence that PUC Filings Include Forced Sale of Assets of Forced Generation.....	21
Legal Standard of Anti-trust Violation of Exercise of Market Power Versus FERC Standard .....	21
Illegal Actions under FERC Tariffs in Exercising Market Power .....	22
Questions by LT. GOVERNOR BUSTAMONTE re:	
Corporation's Fulfillment of Fiduciary Responsibility to Shareholders while Exercising Market Power .....	22

## Questions by SENATOR BOWEN re:

Reasons Why Exercise of Market Power in Electricity Market Is Different than Other Commodities .....	23
Geographic or Locational Market Power .....	24
FERC's Granting of Market-based Rate Authority .....	25
Impact of Exercise of Potential for Market Power Due to Similar Constraints in Natural Gas Market .....	26
Spark Spread: Difference between Price of Electricity and Price of Natural Gas .....	27
Use of Posted Computer Information to Enable Exercise of Market Power .....	28

## Questions by SENATOR PEACE re:

Lifting of Price Cap by ISO in 1999 .....	29
Generators on ISO Board Who Voted to Lift the Cap .....	29
Main Argument to Lift Cap Was to Prevent Blackouts .....	30
High Prices as Consequence of Second Price Auction Associated in FERC-approved Tariffs .....	31
Bilateral Market and Power Exchange .....	32
FERC's Elimination of Power Exchange and Other Mechanisms .....	32

## Questions by SENATOR MORROW re:

Use of Market Power by Decreasing Prices .....	33
--	----

## Questions by CHAIRMAN DUNN re:

Monopsony .....	34
-----------------	----

Market-based Rates Versus Lack of Market Power in a Given Market .....	35
FERC's Easily Surmountable Standard by Players on Wholesale Market .....	35
View of How Share of the Market Should Be Counted and Implications on Market Power . .....	35
What Is Necessary for Ability to Exercise Market Power in California .....	36
Occurrence of Geographic Congestion with FERC's Forced Sale of Generation Assets.....	38
Maximization of Opportunity for Market Power Due to Forced Sale of Generation Assets .....	39

Questions by SENATOR PEACE re:

Whose Idea to Use Spot Market to Fulfill RMR Contracts.....	40
High Cost of Reliance on Spot Market Versus Long-term RMR Contracts .....	41
Votes on FERC Board for Use of Spot Market rather than Capacity Payments of Other Mechanisms for RMR Contracts .....	42

Questions by CHAIRMAN DUNN re:

August '98 Report Was First Suggestion There Might Be Market Power in Play in California Energy Market .....	42
Conclusions of August '98 Report .....	43
Suggestions in August '98 Report .....	43

Questions by SENATOR JOHANNESSEN re:

Determination of Who Was Pushing for Deregulation.....	44
---	----

When Was FERC's Position that California Needed Additional Energy Generation.....	44
Rumor that Millions Were Paid to Potential Generators by Utilities to Not Build More Generation Capacity in California .....	45
September '96 Meeting in Phoenix Where Utilities Were in Position to Take Advantage of Developing Energy Problems In California.....	45
Separation of California into Two Markets.....	46
Further Enhancement of Market Power by Stopping Additional Capacity to Transport Gas and Electricity.....	47
Ability of Narrow Group of Producers to Manipulate Market Based on Calculations of Future Market.....	48

Questions by CHAIRMAN DUNN re:

March '99 Report.....	50
Motivation for Report .....	50
Methodology of Report .....	51
Summary and Conclusions .....	51
Competitive Benchmark.....	52

Questions by SENATOR PEACE re:

Power Exchange's Market Monitoring Committee Told to Change Their Reports.....	55
Members of PX's Market Monitoring Committee Threatened if They Published Their Reports.....	56
Request of Chairman to Get Witnesses from PX's Market Monitoring Committee and Other Members of ISO's Market Surveillance Committee.....	56

Filing of Market Monitoring Reports and Market Surveillance Reports as Part of Filed FERC-approved Market-based Tariff For Each Market Participant .....	57
---	----

Necessity for Majority Vote of FERC Commissioners and Finding no Exercise of Market Power for Firms to Extend Their Right to Charge Market-based Rates .....	57
---	----

Filing of Market Surveillance Reports by ISO Versus Filing of Market Monitoring Reports by PX.....	58
--	----

Questions by CHAIRMAN DUNN re:

October '99 Report .....	58
--------------------------	----

Motivation for Report And Conclusions .....	58
--	----

Comments Regarding Exercise of Market Power in Report .....	59
--	----

Ongoing Discussions between the Market Surveillance Committee and FERC re: Definition of Market Power .....	61
---	----

March 2000 Report .....	63
-------------------------	----

750 Price Cap .....	64
---------------------	----

Core Debate .....	65
-------------------	----

Questions by SENATOR PEACE re:

Effect of 750 Price Cap on Forward Market .....	66
--	----

Notion that FERC only Allowed Price Cap to Be Applied to In-market Participants.....	67
---	----

Municipal Utilities Chose Not to Be In-market Participants, Thus, Not Subject to Price Caps .....	67
---	----



Munis Lack of Participation Forced ISO to Go Out-of-Market for Supply .....	68
Import Vs. In-State Supply .....	69
Transmission Constriction and LAWP's Price of Their Transmission System .....	70
Attempt by Legislature to Close Negotiating Gap between Municipals and ISO .....	71
Amount of Electrons at Stake had Munis Been Participants .....	71
Questions by CHAIRMAN DUNN re:	
September 2000 Report .....	71
Motivation, Action, and Summary.....	71
Problems Identified in Report .....	72
View of Market Power in September 2000.....	73
Questions by SENATOR JOHANNESSEN re:	
Natural Gas Market in September 2000.....	74
Questions by CHAIRMAN DUNN re:	
December 2000 Report .....	74
Definition of Soft Cap .....	75
Importance of Affiliates .....	75
Questions by SENATOR JOHANNESSEN re:	
Use of Affiliate to Raise Cap .....	76
Possibility for Collusion .....	76
Questions by SENATOR PEACE re:	
FERC's Cap Induced Use of Most Expensive Generators.....	77

Exercise of Market Power only	
Explanation for Extraordinary	
Natural Gas Prices Currently .....	78

FERC: Stupidity or Corruption .....	78
-------------------------------------	----

Questions by CHAIRMAN DUNN re:

February and 2001 Reports .....	78
---------------------------------	----

Lack of Vesting Contracts When Assets Were Sold .....	79
--	----

Inability of Soft Cap to Lower Prices ....	80
--	----

Questions by SENATOR PEACE re:

Participation in Workshops and Meetings In December 1995 .....	81
---	----

Reason FERC Did Not Require Sell- Back for Disposed Generation .....	81
---	----

Legislature's Attempt to Get PUC to Request that Change .....	81
--	----

Reason FERC Would Not Allow Change .....	81
--	----

Letters between Governor Pete Wilson and Betsy Moler, Chair of FERC .....	82
--	----

FERC's Opposition to Long-term Contracts .....	82
--	----

Fiduciary Responsibility to Shareholders Vs. Fiduciary Responsibility to Public .....	83
--	----

Questions by SENATOR JOHANNESSEN re:

Who Purchased Divested Generating Facilities .....	83
---	----

Connections between Sale of These Facilities and Buyers of Facilities .....	84
--	----

Relationship between Generating Facilities And Those to Whom They Sell .....	84
---	----

## Questions by SENATOR PEACE re:

Possibility of Generating Company Selling to Trading Affiliate .....	85
---	----

## Questions by CHAIRMAN DUNN re:

Necessity to Ask Entity if Output Has Been Pledged to a Final Consumer .....	86
Final Comments on March 22, 2001 Report.....	86
Market Power Mitigation .....	87
Necessity for FERC to Regulate .....	88

## Questions by CHAIRMAN DUNN re:

Earliest Time when Exercise of Market Power Was Evidenced in California.....	88
Evidence of Market Power in Hands of Big Five Generators in California .....	88
Current Evidence of the Exercise of Market Power in Wholesale Electricity Market .....	90
Applications Filed by Big Five Generators To Continue Market-based Rates .....	91
More Capacity Now than in Original Filing.....	91
Challenges to Reapplications at FERC Based on Evidence of Market Power .....	92
Brief Recess .....	93
Resumption of Testimony of DR. WOLAK .....	93

## Questions by CHAIRMAN DUNN re:

Market Power vs. Anti-trust or Collusive Behavior.....	93
---	----

Recommended Things to Look at to Determine Occurrence of Coordinated Behavior .....	94
Communication between Players on Wholesale Electricity Market .....	96
Indirect Evidence of Coordinated Behavior .....	98
Need to Satisfy Civil Preponderance Of Evidence Standard .....	98
Communication between Participants Via Appearances before Regulatory Bodies.....	99

Questions by SENATOR JOHANNESSEN re:

Comments in 1999 by Dynegy Executives to Congressional Committee and Later Comments To Wall Street .....	100
--	-----

Questions by SENATOR PEACE re:

After Reading MSC Reports, Generator Representative's Votes on ISO Board to Mitigate the Exercise of Market Power.....	101
Generators on ISO Board Always Voted Together .....	101
Coordinated Effort Vs. Sharing Information as a Trade Association .....	102
Collateral Evidence of Indirect Activity Associated with Collusive/Collective Behavior .....	102
Recommendation to Chair to Seek Subpoenas for All Documents of Independent Energy Producers Association .....	103

Questions by CHAIRMAN DUNN re:

Other Areas that Should Be Explored to Determine the Existence of Indirect Evidence of Communication .....	104
--	-----

Evidence of Communication between Players In Wholesale Electricity Market .....	105
--	-----

Questions by SENATOR JOHANNESSEN re:

Unusual for One-third of Generating Capacity to Be Down During Heaviest Demand Cycle.....	107
---	-----

Questions by SENATOR BOWEN re:

Ability to Do Statistical Analysis to Evaluate Outages.....	110
--	-----

Questions by CHAIRMAN DUNN re:

Randomness of Forced Outages .....	112
Availability to Committee of Comparable Information on Outages .....	112

Questions by SENATOR MORROW re:

Inability to Verify the Legitimacy of Forced Outages.....	114
--	-----

Questions by CHAIRMAN DUNN re:

Randomization Comparison on Company-by- Company Basis vs. Year-to-Year Basis.....	116
Companies with Generation Facilities in California Would Not Have Identical Forced Outage Hours.....	118

Questions by SENATOR KUEHL re:

Evidence of Purposeful Withholding .....	118
Physical Withholding Not Related to Outages .....	119
Economic Vs. Physical Withholding .....	120

Statements by CHAIRMAN DUNN re:

Hold Other Scheduled Witnesses for Future Hearing.....	124
---	-----

## Questions by SENATOR JOHANNESSEN re:

Number of Generators in State .....	125
Need to Find Person Who Ordered Shutdowns.....	126
Thread of Circumstantial Evidence .....	127

## Questions by CHAIRMAN DUNN re:

Possibility of Forced Outages Spreading to Other Markets .....	128
---	-----

## Questions by SENATOR JOHANNESSEN re:

Need for Electricity, as Vital Product, To Be Treated Differently .....	129
Ability to Correct Problem without Government Controls.....	130
FERC is Biggest Problem.....	131

## Questions by ASSEMBLY MEMBER MATTHEWS re:

Ways Generators Did Not Provide Power.....	133
Way to Demonstrate whether Outages Were Random.....	134

## Questions by SENATOR MORROW re:

Is Purposeful Withholding Acceptable With Regard to FERC Tariffs or Regulations.....	135
Criminal Penalties Associated with Violation of FERC Tariff .....	136

## Statements by SENATOR BOWEN re:

Need to Reform System for Future .....	137
--	-----

## Questions by CHAIRMAN DUNN re:

Performance of Stakeholders with Respect To Sale or Failure to Sell Available Capacity .....	138
Coordinated Behavior of Forebearance Vs. Profit Today.....	141
Unlimited Profits in the Tomorrow Market Versus the Today Market .....	143
Characteristics of a Particular Market Which Make It Susceptible to Coordinated Behavior .....	144

## Statements by SENATOR PEACE re:

FERC's Market Signal by Failing to Act.....	145
Forward Contracts .....	146
Psychology of Markets .....	146

## Questions by SENATOR JOHANNESSEN re:

Need for Additional Capacity for Generation.....	149
---	-----

## Questions by SENATOR PEACE re:

Real-Time Pricing Meters on the Market.....	150
Interval Meters.....	151
All Elements Must Be in Place for Market to Function.....	152
Need to Get Demand to Move Around In the Day.....	153

## Questions by SENATOR JOHANNESSEN re:

No Need for More Capacity .....	153
Social Engineering of Lifestyle .....	155

## Questions by SENATOR PEACE re:

Focus on Large Consumers with Respect to Load Demand Shift .....	157
Deployment of Real-time Meters Was Fought by Advocates of Competition.....	158

## Statements by SENATOR JOHANNESSEN re:

Cost of Producing Hydropower .....	159
Possibility of Building Capacity for Water . .....	160
Conservation Is Limited .....	160
Load Shift Vs. Conservation .....	160

## Statements by SENATOR PEACE re:

Transition to Deregulated Environment.....	162
Problem Is FERC's Unwillingness to Regulate .....	162

## Questions by CHAIRMAN DUNN re:

Estimate of Total Cost of Wholesale Electricity in California for 2001 .....	163
Need to Examine Behavior of Players and Affiliates as a Whole .....	165
Gas Price in California Now Compared to Other Areas in Country .....	166
Has Any Entity Done Big Picture Analysis of Behavior of a Given Company and All Its Affiliates, Including Gas .....	167
Occurrence of Trusts in California Wholesale Electricity Market .....	168
Legislative Recommendations to Correct Behavior on Wholesale Electricity Market .....	169



Series of Confidentiality Agreements.....	172
Recommendation as to How Committee Can Gain Access to Information Covered by Confidentiality Agreements .....	173
Termination of Proceedings.....	174
Certificate of Reporter .....	175

1 P-R-O-C-E-E-D-I-N-G-S

2 -- oo0oo--

3 CHAIRMAN DUNN: Welcome everybody. We're going  
4 to get going. We are missing a few of our members that I  
5 mentioned before. We're going to find some wandering in and out  
6 as they balance other committee responsibilities along the way.

7 We want to start. I want to do a little bit of  
8 housekeeping, then I want to invite any opening comments by any  
9 of the committee members currently in attendance, and then get  
10 right into our three witnesses that will testify today.

11 First of all, some of the procedural sides of it,  
12 I want to update everyone, since many of our offices have had  
13 repeated requests about where things sit, and what things are  
14 going on.

15 Real quickly, as most of you are already aware,  
16 we did issue document requests to certain of the generators.  
17 They're not the only ones that will be receiving document  
18 requests. In fact, we have others that will probably be going  
19 out this week or early next. For those document requests that  
20 were issued, we have received some response, and we are  
21 basically at the phase now where we're going to be sitting down  
22 with those that received the document requests to try to work  
23 out, as much as possible, what can done on a cooperative basis,  
24 what things can't be done on a cooperative basis, and what items  
25 may need to be subpoenaed at the will of the committee and, of  
26 course, the leadership.

27 So, that's where we sit with respect to the  
28 document requests. The ones that are targeted for late this

1 week, early next, will be to some other stakeholders on the  
2 wholesale market, particularly the traders and so forth. But as

3 soon as they are finalized and in the hands of those to whom  
4 they are directed, we will make them publicly available.

5 The first two hearings really are covering the  
6 same territory. We have always said that we want to review past  
7 investigations or examinations of the wholesale electricity  
8 market to determine what has been done so that we don't simply  
9 repeat the ground that has been done by other entities, whether  
10 other regulatory bodies, whatever the case may be.

11 So, today is going to be the start of that. We  
12 hope to conclude that at our next hearing, which the date has  
13 not been selected yet. We hope to have it as soon as possible,  
14 however.

15 Our hope is to move out of the small room here  
16 today and into one of the larger rooms, particularly given the  
17 size of the committee and the attendance that we certainly  
18 expect at least at various times along the way. So, although  
19 it may be cramped, and we're here for a while this afternoon,  
20 our apologies, but we're bumping up into many of the other  
21 policy committees which had to take up the larger quarters.

22 But that's what the second hearing will be. It  
23 will simply be a continuation of the review of those other  
24 investigations.

25 Procedurally, there some are some things that are  
26 going to be a little out of the ordinary with respect to these  
27 particular hearings. Each of the witnesses that is called to  
28 testify will be sworn in. That will cover every single witness

1 from beginning to end, including if we open it up to public  
2 comment, that any individuals from the public that wish to  
3 comment obviously we'd have to apply the same standard.

4 We've got Evelyn sitting up front here. Evelyn  
5 is the court reporter. The proceedings will be transcribed.

6 So, for those who are testifying, please bear in mind we've got  
7 a court reporter here, and sometimes she may have to interrupt  
8 to ensure that she's got accurate transcription of the  
9 proceedings. So, please don't take offense when Evelyn has to  
10 do her duty and say, "Hold on, hold on." And I particularly ask  
11 the committee members and the witnesses, try not to speak at the  
12 same time because that's going to be very difficult, obviously,  
13 for Evelyn to take down what's done.

14 By the way, Judy, I want to introduce Judy over  
15 here from Leg. Counsel who will be doing the swearing in  
16 responsibilities, who's sitting at the end of the dais over  
17 here.

18 This is a democratic process, small "d", so I'm  
19 not going to try to place any restrictions on other committee  
20 members wanting to ask questions at any time that they want.  
21 But we're going to try to go through in as orderly a fashion as  
22 possible and invite the input of any of the committee members at  
23 any time with respect to the various witnesses along the way.

24 Without anything further, I would invite, if any  
25 of the committee members have any opening comments they would  
26 like to make, let us open it up for that opportunity and turn it  
27 over to Senator Kuehl.

28 SENATOR KUEHL: Thank you, Mr. Chairman.

1 Just very briefly, when we were discussing the  
2 order of these hearings and what we might want to start by  
3 learning, I think there was consensus on the fact that what we  
4 wanted to start with was information about what other entities  
5 already knew. What they had gleaned; what they had gained by  
6 subpoena power or not, and especially if they had issued reports  
7 with information touching on what we needed to know so as not to  
8 duplicate the work already done by those entities. That is, as

9 you know, what we are doing today.

10 It was interesting to me, in reviewing the  
11 reports on which we will receive information today, how many of  
12 them talked about market manipulation, or the potential of  
13 market manipulation, or the issue of the soaring prices, or  
14 issues like economic withholding, or physical withholding, about  
15 which I think we'll hear a lot more.

16 There's a lot of anger in this state, and it's  
17 directed at just about everybody in terms of the energy  
18 crisis. And I think that people will say, because we're having  
19 this hearing, are you simply trying to point the finger at a  
20 certain group of people and point it away from other people like  
21 yourselves, for instance, that it might be pointing at.

22 And I think my opening statement very briefly is,  
23 there is plenty of responsibility that has been taken and should  
24 be taken for decisions. The issues that we're looking at here  
25 relate totally to those decisions that were made outside of our  
26 authority, and the question of the impact that those decisions  
27 have had on areas within our authority and also within our  
28 ability, then, to find a fix.

1 I think it's very, very important for us to know  
2 this and to assess it. Therefore, I'm very pleased to  
3 participate in this process and on this committee. And I look  
4 forward to the testimony that will be given in this hearing and  
5 in further hearings.

6 Thank you, Mr. Chairman.

7 CHAIRMAN DUNN: Senator Escutia.

8 SENATOR ESCUTIA: I just wanted to thank you very  
9 much, Mr. Chairman, for the opportunity to serve on this  
10 committee.

11 I'm also one of those members who has to go back

12 to the Health Committee and other committees to make sure that  
13 we constitute a quorum.

14 However, I just received a very interesting study  
15 from, I think it was the Urban Institute, that indicated that  
16 two cities in my district are in the top five in terms of  
17 poverty: Cudahay, the second poorest city in the country, and  
18 Bell Gardens in the top five.

19 Obviously, the issue of high prices that are  
20 being paid for energy impacts all of our constituents, and it  
21 tends to impact definitely on my constituents most, most  
22 acutely.

23 I still cannot get out of my mind this chart that  
24 revealed that electricity demand in California between 1999 and  
25 2000 only increased by up to 4 percent. Yet, the total  
26 wholesale cost of electricity in California increased by 266  
27 percent during the same time period of 1999 to 2000.

28 I also cannot, you know, let slip from my mind

1 the fact that under the Federal Power Act, the federal law  
2 requires FERC to take action to ensure that the electricity  
3 rates paid by consumers are fair, just, and reasonable. So, I  
4 would hope that as a result of these hearings that we do get the  
5 information that somehow a 266 percent increase in wholesale  
6 price meets the definition of fair, just, and reasonable.

7 And I would definitely encourage the potential  
8 witnesses today, as well as at future hearings, to somehow try  
9 to convince me how this type of price increases meet the  
10 definitions of fair, just, and reasonable under the Federal  
11 Power Act.

12 Thank you very much.

13 CHAIRMAN DUNN: Thank you, Senator Escutia.

14 Senator Morrow, Senator Sher? Okay.

15 Just a few brief comments, and then we'll call  
16 our first witness forward.

17 Today we begin a journey to what we hope will be  
18 the truth behind the failure of the California electricity  
19 market to deliver the benefits of competitively priced  
20 electricity to the people of California.

21 The role of this committee, at least from my  
22 perspective, will differ from the other efforts undertaken to  
23 address the problem, or the crisis, as we have referred to it,  
24 for the past few months. We're going to spend our time trying  
25 to figure out how to stop the high electricity prices if, in  
26 fact, they're as a result of anti-competitive behavior. We're  
27 not going to be looking at ways to finance those prices.

28 There are, of course, two sides to this problem

1 On one side are the people of the State of California, who are  
2 suffering from the increases that are occurring in their cost of  
3 electricity: businesses, hospitals, police, schools, and  
4 others. They all want to know what happened to the lower  
5 electricity prices that seemed to have been promised when  
6 California deregulated its electricity markets, or at least  
7 began the process.

8 On the other side, there are stakeholders in the  
9 California energy crisis that are seeing massive profits from  
10 the energy crisis. There's no question that there is a massive  
11 transfer of wealth out of the State of California. The question  
12 is whether that behavior is based on actions that fall inside or  
13 outside of the permissible limits of a truly competitive market.

14 Once we have the facts, as I said from the very  
15 beginning, we will determine if legislation is necessary to  
16 correct any problems that we discover. We understand the  
17 Legislature is not the sole voice with jurisdictional authority,

18 but rest assured, we will exercise our full measure of power to  
19 take whatever action is necessary, depending, of course, upon  
20 the findings of this committee.

21 Before we move to our first witness, we've been  
22 joined by a guest of the committee. I want to underscore that  
23 the individual to my left is here as a guest of the committee,  
24 not as a member of the committee. And let me invite him to make  
25 any opening comments he wishes, and that, of course, is  
26 Lieutenant Governor of the State of California, Cruz Bustamonte.

27 LT. GOVERNOR BUSTAMONTE: Thank you,  
28 Mr. Chairman.

1 Just briefly, I'd like to thank you,  
2 Mr. Chairman, as well as the President Pro Tem, for their  
3 leadership in putting this select committee together on a very  
4 important issue.

5 I want to be here as a taxpayer and a ratepayer.  
6 I just got noticed that my rates are going to go up again as  
7 well.

8 These hearings are going to be critical to  
9 seeking the truth about why our energy prices have sky-rocketed  
10 in our state. Specifically, the hearings will help us gather  
11 evidence to figure out what went wrong with the energy market in  
12 California.

13 I'd like to have an open mind with no  
14 preconceived conclusions, and I hope that what we don't find is  
15 that something that I think many of us have suspected for  
16 months, and that is that California's consumers are being gauged  
17 by energy generators.

18 Mr. Chairman, again, thank you for allowing me to  
19 participate in the hearings.

20 CHAIRMAN DUNN: Thank you, Lieutenant Governor.



21                   We have just been joined by another one of our  
22 members, and even though she's just settled in, before we call  
23 the first witness, Senator Bowen, would you like to make any  
24 opening comments?

25                   SENATOR BOWEN: No, I'll have plenty to say  
26 later.

27                   CHAIRMAN DUNN: I won't comment on that. I  
28 suspect it's probably true.

1                   Last invitation, any member of the committee, any  
2 further comments? Seeing none, why don't we turn to our first  
3 witness, who is Professor Frank Wolak from Stanford  
4 University.

5                   Professor Wolak, would you join us.

6                   Judy, if you would take care of the task.

7                   MS. MCGINLEY: Mr. Chairman, JudyAnne McGinley  
8 with Legislative Counsel.

9                   Would the witness please remain standing. State  
10 your name, please.

11                   DR. WOLAK: Frank Wolak.

12                   MS. MCGINLEY: And will you raise your right  
13 hand.

14                   [Thereupon the witness, FRANK WOLAK,  
15 swore to tell the truth, the whole truth,  
16 and nothing but the truth.]

17                   CHAIRMAN DUNN: Professor, if you could have a  
18 seat and settle in. Just give us a signal if you need any water  
19 or so forth.

20                   I wish I could tell you that you'd be in and out  
21 of here in ten minutes, but I suspect that's not going to be  
22 true. But just let us know if you need any water.

23                   By the way, while the Professor is settling in, I

24 want to extend a thank you to all the staff from the various  
25 offices and the committee that have been working very hard. And  
26 a thank you to the Sergeant at Arms who are here today to ensure  
27 we have order in the room throughout the entire process,  
28 although I'm not suspecting that's going to be a problem

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1 Professor, are you ready?

2 DR. WOLAK: Yes.

3 CHAIRMAN DUNN: You and I have spoke. What I'll  
4 do, which perhaps is easier for you, is, what we want to do is  
5 take you through. You have been either the author or the joint  
6 author with a number of different reports concerning the market  
7 behavior in the California electricity market. We want to walk  
8 through those with some detail to understand where, from your  
9 role, you began and where you are today. As I stated in the  
10 opening comments, we don't want to repeat.

11 But for everybody's sake, let's do a little  
12 background. If you could, tell us a little bit about yourself,  
13 Professor, so we know who you are.

14 DR. WOLAK: I'm a Professor of Economics at  
15 Stanford University. Areas of research are essentially  
16 regulation and anti-trust economics, is I guess the best way to  
17 describe it.

18 Perhaps more relevant for today is, I'm Chairman  
19 of the Market Surveillance Committee for the California ISO.  
20 This is an independent market monitoring committee that was set  
21 up at the start of the market by the Federal Energy Regulatory  
22 Commission to do a number of things.

23 First is to serve as an advisor to the ISO Board,  
24 as well as to the ISO management on issues relating to market  
25 design and market power.

26 And then the other role is to prepare periodic

27 reports to FERC on the performance of the market and essentially  
28 assist in the Department of Market Analysis at the ISO with

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1 monitoring the market for the exercise of market power.

2 CHAIRMAN DUNN: How long have you served on the  
3 Market Surveillance Committee?

4 DR. WOLAK: Since the start of the market,  
5 roughly around a little before January of 1998.

6 CHAIRMAN DUNN: There is also a Market Analysis  
7 Committee within the ISO. Can you describe for us the  
8 distinction between the two?

9 DR. WOLAK: Right. The Department of Market  
10 Analysis is essentially the ISO's market monitoring unit and is  
11 part of the ISO.

12 The Market Surveillance Committee is presumably  
13 independent of that, and the major difference is just simply the  
14 independence. Both are tasked with looking at -- I would say I  
15 guess the distinction would be that the Market Surveillance  
16 Committee is more the big picture, forward looking; whereas, the  
17 Department of Market Analysis is more day-to-day, but also a big  
18 picture as well, but I guess in terms of the relative emphasis.  
19 That's the primary difference, as well as the independence, is  
20 that we're composed of members who have no affiliation with the  
21 market.

22 CHAIRMAN DUNN: Our next witness, as you know, is  
23 Dr. Hildebrandt, who is with the Market Analysis Committee, and  
24 you're with the Market Surveillance Committee?

25 DR. WOLAK: Right.

26 CHAIRMAN DUNN: Through that position, my  
27 understanding is there have been a variety of reports issued by  
28 the Market Surveillance Committee concerning the California

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1 electricity market.

2 DR. WOLAK: Yes.

3 CHAIRMAN DUNN: What I want to do for all of our  
4 sake is to go back in time, in somewhat of a Reader's Digest  
5 version, walk through the various key reports that that Market  
6 Surveillance Committee has issued tracing the progress up to the  
7 present.

8 If we can start, and if you want to just run with  
9 it, Professor, and go as far as walking through the reports,  
10 great. Again, I welcome any of the committee members to ask any  
11 questions they have.

12 Take us back to the beginning. When was the  
13 first report issued, and what was contained in it?

14 DR. WOLAK: Sure.

15 The first report was filed in August of 1998.  
16 This was in response to a request by the Federal Energy  
17 Regulatory Commission to investigate the performance of the  
18 market as a result of what happened in the replacement reserve  
19 market, which is one of the ancillary services markets that the  
20 ISO operated, and what happened was that --

21 CHAIRMAN DUNN: Can I stop you.

22 I want to set the stage now. There's going to be  
23 a lot of terms used that we, as lay people, won't recognize.  
24 So, I invite all the committee members to interrupt at any time,  
25 sorry Professor, to have them explained in lay terms so we can  
26 truly understand.

27 Can you refer to the markets that you define in  
28 lay terms, the market that you just described?

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1 DR. WOLAK: Sure.

2 There's what's called energy market, which is  
3 essentially electricity. And then there are what are called

4 ancillary services markets, and these are various forms of  
5 reserves or standby capacity that is necessary to keep the grid  
6 operating in real time, so that basically demand equals supply  
7 at every point in the network within a given unit of time. I  
8 mean every second, effectively.

9 And the ISO runs what are called reserve markets,  
10 usually referred to as ancillary services markets, as it runs  
11 regulation, and spinning reserve, nonspinning reserve, and then  
12 what's called replacement reserve. These differ in terms of  
13 sort of the functions that they serve.

14 And what had happened was that in the replacement  
15 reserve market, there had been effectively price spikes of the  
16 magnitude of, first, around \$5,000 per megawatt, and then up to  
17 \$9,999.99 per megawatt. Rumor has it that the market  
18 participant that submitted that bid thought that that was the  
19 highest bid you could submit due to the software constraints.

20 But basically what had happened was, the price  
21 spike occurred in these ancillary services markets, and this was  
22 a product that previously had been selling for an average price  
23 of probably less than \$10. So, this certainly caught the alarm  
24 of the ISO as well as the alarm of the buyers of the ancillary  
25 services. And as a result, a temporary price gap was imposed,  
26 and then the FERC ordered a, if you like, an analysis of what  
27 had happened.

28 CHAIRMAN DUNN: And the August '98 report was  
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1 that analysis?

2 DR. WOLAK: Yes.

3 CHAIRMAN DUNN: Can you tell us, again, briefly  
4 summarize what the analysis contained.

5 DR. WOLAK: Well, effectively, something that --  
6 the major conclusion was that clearly these markets were not

7 functioning in a manner that seemed consistent with a  
8 competitive market in particular. What you would have is, you  
9 know, several hours of very low prices, and then several hours  
10 of prices at the price gap, as opposed to any sort of  
11 intermediate prices. Prices were either very low or very, very  
12 high. And very high being at the price gap. So, that was sort  
13 of one of the conclusions.

14 And one of the analyses that we did was to try to  
15 understand why that was occurring. And one of the first things  
16 that arose was essentially the exercise of unilateral market  
17 power in the ancillary services markets as well as, you know, in  
18 the energy market. And sort of, that was the first sort of  
19 investigation of those sorts of issues.

20 CHAIRMAN DUNN: You just used a phrase that  
21 probably is going to take us down a little bit different line of  
22 questioning, and that is market power.

23 Can you describe for us what you mean by market  
24 power?

25 DR. WOLAK: Yes. It's effectively, as defined  
26 under the U.S. merger guidelines and U.S. anti-trust laws as the  
27 ability of a firm to unilaterally raise price from its actions  
28 and profit from this price increase. So, that would be, a firm  
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1 that has this ability is a firm that has market power.

2 CHAIRMAN DUNN: And what's the importance or  
3 relevance of market power?

4 DR. WOLAK: If you have it, it allows you to earn  
5 higher profits than if you didn't have it.

6 CHAIRMAN DUNN: What its relationship to normal  
7 competitive behavior?

8 DR. WOLAK: Well, in what we would think of as a  
9 competitive market, the idea is that no firm or all firms have a

10 minimal amount of market power, and hence, behave as if they are  
11 price takers rather than price makers, and as a consequence,  
12 will behave in a different manner than if they were able to  
13 influence the price. In particular, they would bid differently  
14 in a competitive electricity market, in a world in which they  
15 felt they had unilateral market power, versus in a world in  
16 which they felt that they did not.

17 CHAIRMAN DUNN: Senator Morrow, then Senator  
18 Kuehl.

19 SENATOR MORROW: If I can build upon that,  
20 Professor Wolak, on your understanding of the definition of  
21 market power.

22 Does it necessarily imply a deliberate action on  
23 the party in question?

24 DR. WOLAK: Certainly. I mean, you basically,  
25 you do it -- you could think of it as exercising market power  
26 is just the same as unilateral market power, and it's important  
27 to have that qualifier, as the equivalent to simply maximizing  
28 profits is the equivalent to serving your shareholders'

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1 interests. I mean, moreover, to simply exercising your  
2 fiduciary responsibility as a manager of a firm.

3 SENATOR MORROW: Does it also imply creating a  
4 condition where you'd have artificially high prices in order to  
5 increase those prices?

6 DR. WOLAK: Well, I mean, I think it's helpful to  
7 think of the benchmark, I mean, relative to if you were a price  
8 taker, certainly prices will be significantly higher than if you  
9 were a price taker, but the point that remains is that it may  
10 not be individually rational for you to behave in a manner as a  
11 price taker would behave.

12 If you know that you have the ability to

13 influence the price, then you're not serving the fiduciary  
14 responsibility of your shareholders unless you attempt to  
15 influence the price to make them as much money as you can.

16 SENATOR MORROW: Does it necessarily involve, if  
17 one is exercising market power under that definition, does it  
18 necessarily involve a violation of any rules, administrative  
19 regulation, or law?

20 DR. WOLAK: Not necessarily, no. I mean, that  
21 would be the distinction that I would make between unilateral  
22 exercise of market power and essentially illegal use of market  
23 power. And simply unilateral, that's simply under U. S.  
24 anti-trust law, it's my understanding, is that's -- you have a  
25 right to do that.

26 SENATOR MORROW: So, a unilateral exercise of  
27 market power as you use the term doesn't mean a violation of any  
28 anti-trust law?

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1 DR. WOLAK: As with everything, it's a question  
2 of degree, and it's a question of what the jury says.

3 But I mean, there are rarely sort of bright  
4 lines. In particular, one thing that's very important is that  
5 in all markets, all firms have a common interest in raising  
6 prices. So, in some sense, you know, there is a fine line  
7 between the, if you like, the sort of unilateral exercise of  
8 market power and the coordinated action. And that's essentially  
9 why we have the courts and why we have anti-trust law to sort  
10 those two out.

11 SENATOR MORROW: I assume, at least for the  
12 benefit of my interest, if you find a bright line where somebody  
13 passed that, highlight that for me; will you?

14 DR. WOLAK: Oh, yes. That's certainly something  
15 I'm interested in as well.



16                   The difficulty with that is that the sorts of  
17 information that you need is far different from the information  
18 that is available to us, despite the fact that we still have a  
19 considerable amount of information at the ISO.

20                   CHAIRMAN DUNN: Can I have one question to add on  
21 to what Senator Morrow said.

22                   There is, however, some relevance of the  
23 existence of market power to one's ability to access  
24 market-based regulation from FERC?

25                   DR. WOLAK: Oh, yes. Effectively, I mean, this  
26 is in some sense the peculiarity of the -- peculiarity is a  
27 very, I think, polite way of saying it -- but FERC essentially  
28 requires the generators, as a condition to get market-based

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1 pricing, to demonstrate they have no market power. And I guess  
2 I think that's an extreme standard. It's doubtful that any firm  
3 in the California market passes that test. And I think in all,  
4 there exist circumstances under which virtually all firms have  
5 some ability to influence the market price.

6                   So, taken literally, the FERC definition, I  
7 think, makes absolutely no sense.

8                   CHAIRMAN DUNN: Senator Kuehl.

9                   SENATOR KUEHL: I guess in terms of identifying  
10 what terms mean, and how they relate to each other, my question  
11 is also a follow-on question.

12                   There's a lot of faith given, to the notion of  
13 opening a market, to the fact that there will then be  
14 market-based rates. Is there an inherent conflict? Do I hear  
15 you saying there may be or is an inherent conflict between  
16 market power and the exercise of the market to set market-based  
17 rates?

18                   DR. WOLAK: Well, I guess to me the way that I

19 would explain it is that FERC still regulates all electricity  
20 markets in the United States, including California. At least  
21 that's what they say.

22 And so, and the point is that the federal power  
23 access rates must be just and reasonable, as you said, and so  
24 this is a traditional cost-of-service based standard for what is  
25 a just and reasonable rate. And there's a long legal precedent  
26 for exactly that.

27 So, the first question you would ask yourself is,  
28 well, if that's the case, how do you then introduce a market?

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1 Well, the logic that FERC uses is, they say,  
2 okay, we know that if a market is competitive then it has the  
3 following characteristic, that you set the price equal to the,  
4 if you like, operating costs of the highest cost unit operating.

5 And so, there is a price that is tied to a cost.  
6 In other words, the price the based in cost. And that's true in  
7 a competitive market.

8 Whereas, in a market that's characterized by the  
9 exercise of market power, there's a, if you like, a divorce  
10 between the cost of providing the power and the actual price  
11 that's charged for that power.

12 And that's why we, as FERC would say, if the  
13 market is characterized by the exercise of market power, then  
14 that sort of logic fails, the logic being that we can replace a  
15 market price with a cost-of-service price and still feel that we  
16 are protecting consumers under the Federal Power Act.

17 I guess what I would say is that that logic is  
18 fine and works just fine, but the methodology that FERC uses to  
19 determine whether or not a market participant has the ability to  
20 exercise market power is woefully inadequate and uses  
21 methodologies that, you know, the economics profession discarded

22       probably 30 years ago. I mean, that's the fundamental problem,  
23       is, if you would say, the sort of -- the conflict.

24                     SENATOR KUEHL: Thank you.

25                     CHAIRMAN DUNN: Professor, let's go back and  
26       finish up.

27                     SENATOR PEACE: May I?

28                     CHAIRMAN DUNN: Absolutely.

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1                     SENATOR PEACE: Professor, you started out your  
2       conversation dealing with the issue of illegal exercise of  
3       market power under anti-trust standards.

4                     As a matter of clarity, the standard that you  
5       described, it's an unrealistic standard in the FERC vernacular  
6       and written requirements of no ability to exercise market power.

7                     I want to make sure we get on the record clear,  
8       that the expectation of behavior of the standard which the  
9       market participants must meet in order to meet their filed  
10      tariff obligations are standards substantially below that which  
11      would rise to an actual violation by anti-trust standards.

12                    Is that not correct?

13                    DR. WOLAK: Vastly.

14                    SENATOR PEACE: So, it is possible for --

15                    DR. WOLAK: I mean, taken literally, the FERC  
16      standard is saying, you should be basically the perfectly  
17      competitive benchmark.

18                    SENATOR PEACE: And able to exercise market --

19                    DR. WOLAK: Any market power.

20                    SENATOR PEACE: Correct.

21                    And over four years of hearings, the only  
22      methodology by which FERC investigated the potential to exercise  
23      market power was the simultaneous ownership of generation and  
24      transmission; is that correct?

25 DR. WOLAK: Yeah, they used what they call a hub-  
26 and-spoke analysis, which is essentially just looking at market  
27 shares. But that ignores a very important aspect that demand  
28 matters, too.

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1 SENATOR PEACE: So, FERC presumed as long as they  
2 forced the disaggregation of ownership of generation by those  
3 who owned transmission systems, that that alone would preclude  
4 the potential for the exercise of market power.

5 DR. WOLAK: I don't know that I'd want to give  
6 them that much credit, but --

7 SENATOR PEACE: Give them as much as credit as a  
8 reasonable person could. That seems to have been, at best --

9 DR. WOLAK: That seems to be consistent with what  
10 they've done.

11 SENATOR PEACE: And that, indeed, was why FERC  
12 insisted that the filings at FERC in 1995 by the PUC include a  
13 forced sale of assets of forced generation.

14 There's been a lot of impression that that was a  
15 California idea when, in fact, it was a FERC idea, that the  
16 utilities had to sell these generation assets in order to  
17 preclude their ability to exercise market power; correct?

18 DR. WOLAK: Yes, by the FERC standard of market  
19 share, clearly the investor-owned utilities would have too large  
20 a market share.

21 SENATOR PEACE: And a final point is, generators  
22 and marketers have stated publicly repeatedly that they did not  
23 exercise market power.

24 Is it not possible for them to make a truthful  
25 statement to that effect, meaning that they did not exercise  
26 market power to the legal standard associated with anti-trust  
27 violation, and yet not be consistent with the standard they were

28 obligated to under the FERC standard?

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1 DR. WOLAK: Yes, I think that's exactly right,  
2 yes.

3 SENATOR PEACE: And so, the legal question that  
4 ultimately will be, no doubt, litigated for years in federal  
5 courts is the degree to which, if at all, generators and  
6 marketers acted illegally under the FERC tariffs in exercising  
7 market power, not necessarily whether they engaged in an  
8 anti-trust violation.

9 DR. WOLAK: Yes, that's correct.

10 SENATOR PEACE: They may have also engaged in an  
11 anti-trust violation, but that would be a higher legal standard?

12 DR. WOLAK: Yes, definitely. You've captured the  
13 essence.

14 SENATOR PEACE: Thank you.

15 CHAIRMAN DUNN: Lieutenant Governor.

16 LT. GOVERNOR BUSTAMONTE: I want to make sure  
17 that I understand what I think I heard you say earlier.

18 A corporation fulfilling its fiduciary  
19 responsibility, maximizing its profits, and ensuring the  
20 position of shareholders, doing all of that, which seems  
21 reasonable, they can still be engaged in unlawful exercise of  
22 market power?

23 DR. WOLAK: By the exact same logic that Senator  
24 Peace said.

25 LT. GOVERNOR BUSTAMONTE: I want to make it  
26 simple and clear.

27 So, that's not really a defense necessarily.

28 DR. WOLAK: Well --

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1 LT. GOVERNOR BUSTAMONTE: Exercising their duties

2 as a corporate entity.

3 DR. WOLAK: Well, it's -- I agree. It's not a  
4 defense, but it requires that FERC will enforce the law. That's  
5 where we're having the problem at the moment.

6 LT. GOVERNOR BUSTAMONTE: Thank you.

7 CHAIRMAN DUNN: Senator Bowen.

8 SENATOR BOWEN: Thank you.

9 Just a couple of questions to follow up on this  
10 topic of market power.

11 The first is whether or not there are any factors  
12 or reasons why we might expect how market power is exercised or  
13 not to be different with regard to electricity than it is, say,  
14 with regard to Diet Dr. Pepper, or Depends, or three-hole  
15 notebook paper?

16 Are there things about electricity, and about how  
17 it's transmitted, stored, bought, and sold, or whatever, that  
18 might give us some different concerns about who can exercise  
19 market power?

20 DR. WOLAK: Well, the one thing that I certainly  
21 like to say when people ask is, if you were going to sort of  
22 take the worst case scenario for what products are particularly  
23 susceptible to the exercise of market power and what  
24 characteristics, electricity would have all those  
25 characteristics of supply must equal demand at every point in  
26 time.

27 It's subject to capacity constraints. You can  
28 only supply maybe a little bit more than 10 megawatts from a 10<sub>2</sub>

1 megawatt facility. It's not storable. And the way that it's  
2 priced to final consumers makes the demand effectively perfectly  
3 inelastic.

4 So, if you were going to write down the

5 description of the product that would be particularly  
6 susceptible to market power, those would be all of the  
7 characteristics that you would need.

8 And I guess, sort of finishing up on that point  
9 is, that's why we've been regulating it for the past one hundred  
10 years.

11 SENATOR BOWEN: Some of us are coming to  
12 understand the reasons why we regulated it for a long time in a  
13 whole different way.

14 I've also heard the term geographic market power,  
15 or locational market power, or variations on that concept, under  
16 which, it's my understanding, that you could have the viability  
17 of transmission capabilities, for example; market power  
18 exercisable in a particular area even if there is other supply,  
19 because it simply can't get where it needs to go.

20 How much is that a factor in terms of the kinds  
21 of things we have seen in California?

22 DR. WOLAK: Personally, it's sort of taking it to  
23 its logical extreme.

24 That is the source, I think, of virtually all the  
25 market power, the ability of firms to exercise market power, for  
26 the simple reason that if I could beam electricity to final  
27 customers and didn't need to use the transmission grid, I think  
28 this would be an extremely competitive market because of the

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1 fact I have a high fixed cost, low marginal cost of supplying  
2 the product. If I can -- any one of those generators can  
3 deliver it to me, that would be extremely competitive.

4 Whereas, with the transmission network, what that  
5 effectively enables me to do is to essentially shrink the size  
6 of the market that I serve by congesting the transmission into a  
7 local area that I have a lot of capacity in. And by doing that,

8 by congesting the line coming into where I'm located, I've now  
 9 created a much smaller market. And, you know, just on the  
 10 simple capacity share analogy, I now own a larger share of the  
 11 capacity necessary to serve that demand, and hence, can raise  
 12 the price however I would like to do that to enable me to turn a  
 13 higher revenue.

14 So, essentially, I think transmission  
 15 constraints, and just the fact that you have to deliver over the  
 16 transmission network is really the problem. I mean, if you  
 17 thought in terms of the available capacity in the west to sell  
 18 into California, there's a lot of capacity in the west, but  
 19 there's only so much that can get into California in a given  
 20 hour because of the transmission constraints. It's just the  
 21 simple fact that there isn't a lot of transmission capacity.

22 SENATOR BOWEN: Did the FERC take that into  
 23 account when it granted market-based rate authority?

24 DR. WOLAK: I think there may be a difference of  
 25 opinion on that. They would, I'm sure, say that they did. I  
 26 think others, myself included, would say they didn't to the  
 27 extent that it really matters.

28 I mean, certainly there was attention paid to it,  
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1 and it was paid in the form of the reliability must-run  
 2 contracts. There was a concern that, yes, there is local market  
 3 power in the sense that will be certain hours when certain  
 4 generators located in the grid in a certain place will be  
 5 required to serve demand regardless of what price they bid.  
 6 Because of that, we will institute these reliability must-run  
 7 contracts, which give the ISO the right to call on them when  
 8 those conditions occur.

9 But there are other factors that go further than  
 10 that that are important, I think, to bear in mind.



11                   SENATOR BOWEN: Along the same line, what impact  
12 on the exercise of potential for market power exercise comes  
13 from the fact that we have similar constraints in markets on the  
14 natural gas side, both with regard to the natural gas pipeline  
15 capacity and with regard to the commodity itself?

16                   Are there any restrictions on competitors in the  
17 marketplace for electricity also taking actions that restrict  
18 the ability of their competitors to obtain natural gas, and  
19 therefore drive up the price through natural gas market  
20 manipulation?

21                   DR. WOLAK: Well --

22                   SENATOR BOWEN: You may need to disaggregate  
23 that. It's sort of a large ball of questions.

24                   DR. WOLAK: Particularly if FERC -- I certainly  
25 think that these are highly integrated markets. And almost all  
26 of the market participants selling in California also are major  
27 players in the gas market as well, and that makes perfect sense  
28 because what generating facility does for you is give you the<sub>2</sub>

1                   ability to arbitrage what's called the spark spread.

2                   And what the spark spread is, is the difference  
3 between the price of electricity and the price of natural gas.  
4 And if I own a generating facility, that gives me the ability to  
5 essentially convert gas into electricity; and hence, if you  
6 like, the electricity price of my gas today is lower than the  
7 price of the electricity, then what I'm going to do is sell the  
8 gas as electricity. And if it goes the other way, then I'm  
9 going to sell it as gas.

10                   So, it makes very good sense for you to be  
11 integrated into both businesses. And moreover, if you're  
12 integrated into both businesses, you really don't care where you  
13 make your profits. I can either make my profits in the

14 electricity side, or I can make my profits on the gas side.

15 And then, if I have FERC's help in the form of a  
16 soft price cap where I can cost justify my bid based on the gas  
17 price, then definitely I want to make it on the gas side.

18 Because what I can do is, if I can keep the price of gas up,  
19 then I can justify a very high bid into the electricity market.  
20 And as long as the gas affiliate is making the money, I don't  
21 really care.

22 So, that is a major factor.

23 SENATOR BOWEN: If you're a producer, you don't  
24 care.

25 But presumably if you're a customer, either on  
26 the natural gas or the electricity side, you do care whether it  
27 gets turned into electricity or sold as natural gas.

28 DR. WOLAK: Well, that's true, yes. So, you can<sub>2</sub>

1 effectively leverage what market power that you might have in  
2 electricity sort of, to some extent, back to gas.

3 Now, there are some limitations on that, but I  
4 mean, that's the name of it.

5 SENATOR BOWEN: I think we probably will have  
6 some more discussion of that later.

7 One more question on the market power issue. I  
8 know I read sometime ago that, because of the way that WFCC and  
9 perhaps the ISO or PX were posting information about system  
10 conditions, outages, et cetera, by computer, that it actually  
11 enabled the exercise of market power in ways that might have  
12 been considerably more difficult without that information.

13 Do you want to take a run at that?

14 DR. WOLAK: I have to confess, I am somewhat  
15 skeptical because for the simple reason that we went through the  
16 summer of 1999 with that information available, and the market

17 essentially worked fairly well.

18                   Moreover, if I want to know what a generator is  
19 doing, all I have to do is call up somebody who lives near by  
20 the generator and say, how much smoke is coming out of that  
21 facility, and I've got how much they're producing to a pretty  
22 good number.

23                   SENATOR BOWEN: That's a little more difficult if  
24 you're trying to deal with ten generators than just pulling up  
25 one computer screen and getting a printout of everything that's  
26 happening.

27                   DR. WOLAK: I certainly agree. I mean, it  
28 helps.

2

1                   But I guess my point is, I'm not sure if that's  
2 really -- if you got rid of that, that would solve all the  
3 problems.

4                   SENATOR BOWEN: No, I'm just looking at other  
5 factors that might have gone into enabling people to figure out  
6 patterns in the market and take advantage of those.

7                   SENATOR PEACE: Your reference to '99 is  
8 interesting because there was one material fact different  
9 between '99 and the market structure in 2000, and that was the  
10 lifting of the cap in the ISO; is that not correct?

11                   DR. WOLAK: Well, the price cap through the  
12 summer of 2000 [sic] was 250. And then effective October 1, '99,  
13 it went up to 750.

14                   SENATOR PEACE: It was scheduled to lift all  
15 together -- we kept it in place through the summer of '99, and  
16 then it expired, and there was an effort in May of '99 to keep  
17 it in place through the summer.

18                   And that effort ultimately turned on a difference  
19 of one vote; didn't it? That cap was lifted, was allowed to

20 lift by virtue of the vote of the ISO Board, and the difference  
21 was one vote; is that right?

22 Let me help you; that's right.

23 How many generators -- let's put it this way.

24 What percent of the generators who may or may not have exercised  
25 market power thereafter voted to lift the cap, the generators  
26 represented on the ISO Board?

27 DR. WOLAK: I would expect -- I don't know what  
28 the generators voted. Unfortunately I don't remember that vote,  
3

1 but I would suspect --

2 SENATOR PEACE: The answer would be --

3 DR. WOLAK: -- one hundred percent.

4 SENATOR PEACE: -- a hundred percent. They voted  
5 together to lift the cap.

6 DR. WOLAK: Yes, but they couldn't have gotten  
7 it, I think in fairness to them, they couldn't have gotten it  
8 without the cooperation of a lot of other Board members.

9 SENATOR PEACE: Two in particular: one  
10 representing, allegedly large consumers --

11 DR. WOLAK: Yes, that's the puzzle. That's the  
12 puzzle.

13 SENATOR PEACE: -- who at least has had the  
14 credibility to admit she made a mistake; and one who was  
15 allegedly representing small consumers, who was just in over her  
16 head, and, I think, honestly thought she was doing the right  
17 thing, but was being bullied and threatened by the same vote to  
18 say, if she voted differently, she would be held responsible for  
19 blackouts.

20 That was the main argument, wasn't it, for  
21 getting that cap lifted. If we didn't lift the cap, we'd have  
22 blackouts; correct?

23 DR. WOLAK: I think part of it was just a  
24 perception, I think, among the ISO and the ISO Board that we'd  
25 somehow solved the problems that caused the summer of 1998 --

26 SENATOR PEACE: The arguments were down there,  
27 and when I was down and Ms. Bowen was down, arguing to keep the  
28 cap in place, the arguments by those who argued to lift the cap

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1 was that if we failed to lift the cap, we'd have blackouts; is  
2 that not correct?

3 DR. WOLAK: That's certainly an argument that had  
4 been made.

5 SENATOR PEACE: How many blackouts did we have  
6 before the cap was lifted?

7 DR. WOLAK: Zero.

8 SENATOR PEACE: Zero. Some interesting numbers.  
9 One hundred percent vote one way, zero blackouts before the cap;  
10 lots of blackouts after.

11 Final question with respect to market power and  
12 the pattern of behavior. There were questions raised, similar  
13 to Ms. Bowen's notion, about the role that dissemination of  
14 information, and the role that a visible market in the power  
15 exchange had in terms of accommodating the ability of people to  
16 gain in the market.

17 The suggestion was made that maybe these prices  
18 were the consequence of a second price auction, other mechanical  
19 mechanisms that were associated in the FERC-approved tariffs.  
20 And the argument was that these visible markets and the  
21 existence of a power exchange actually proved to be  
22 anti-competitive, in essence, and that we'd be better off in a  
23 bilateral market; correct?

24 DR. WOLAK: I think it's more -- I think that's  
25 sort of a red herring in the sense that so long as people have

26 the ability to do financial deals around the PX --

27 SENATOR PEACE: They always have the ability to  
28 do bilateral contracts.

3

1 DR. WOLAK: Yeah.

2 SENATOR PEACE: These people argued against the  
3 creation of a power exchange in the first place, way back to the  
4 early '90s; is that correct?

5 DR. WOLAK: I mean, I think that the lessons of  
6 the gas market right now in California, I think, are very  
7 instructive to the benefits of a market such as the PX, because  
8 one of the things that becomes very relevant when people, in  
9 particular FERC, will quote what the price of natural gas in  
10 California is, these are based on surveys of transactions.  
11 There's no sort of, if you like, transparency or, you know,  
12 independent credibility in the prices that you might have.

13 SENATOR PEACE: FERC has now eliminated all of  
14 these mechanisms, the power exchange, and all of these things  
15 that the generators and marketers pointed to as the alleged  
16 problems in this boogie man, supposedly unique, California work  
17 product; have they not?

18 DR. WOLAK: Well, certainly it's --

19 SENATOR PEACE: We now have a bilateral market;  
20 correct?

21 DR. WOLAK: Yes, well --

22 SENATOR PEACE: Which is what they asked for in  
23 the first place.

24 DR. WOLAK: I don't know. They seem to be  
25 pushing PJM on us.

26 SENATOR PEACE: And since we got rid of all of  
27 these various mechanisms, how much has the price gone down?

28 DR. WOLAK: Not very much.

1                   SENATOR PEACE: Has the price gone down or has  
2 the price gone up?

3                   DR. WOLAK: No, it's gone up quite a bit.

4                   SENATOR PEACE: The price has gone up. That's  
5 interesting.

6                   CHAIRMAN DUNN: Senator Morrow.

7                   SENATOR MORROW: Thank you, Professor.

8                   In the last few minutes, we've been on a lot of  
9 rabbit trails. Let me bring you back to the first rabbit trail  
10 we got off when you first uttered the words market power. And  
11 again, according to that definition, would that also include  
12 instances of actions that would have the effect of decreasing  
13 prices, say, for purposes of a buyer?

14                  DR. WOLAK: Certainly. I would expect that buyers  
15 would attempt to exercise monopsony power to the extent that  
16 they can, but unfortunately, buyers in California can't. For  
17 the simple reason that demand is a necessary condition to  
18 exercise market power is the fact that you sell less, so, in  
19 other words, by you credibly offering less at a given price.

20                  But remember, demand is completely inelastic.  
21 So, you can try to exercise your monopsony power, but in order  
22 to do that, you must buy less. In other words, restrict how  
23 much you buy. Think of it as the way that a buyer would  
24 exercise his monopsony power would be to look at the offer curve  
25 of the seller and say: I look and see your offer curve of how  
26 much you're willing to offer, and I figure out exactly that  
27 point, and I buy there to minimize, say, my purchase costs, or  
28 whatever I'm minimizing. But it necessarily means you have to

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1 be able to buy less.

2                   Think of it as the difference between electricity

3 and every other product is that, imagine going in to buy a car,  
4 and someone came in before you and whispered to the guy that's  
5 selling you the car, "This guy must buy a car here."

6 SENATOR MORROW: I'm going to pretend like I  
7 understood you.

8 CHAIRMAN DUNN: Can I ask for just a quick  
9 definition of a word that you used, Professor? Monopsony?

10 DR. WOLAK: Monopsony is single buyer. So, think  
11 of it as single buyer.

12 SENATOR MORROW: In terms of the term market  
13 power, besides whether or not it could be utilized successfully  
14 or not, or the ability to do that, it is all encompassing and  
15 would apply to instances of trying to decrease price?

16 DR. WOLAK: Yes, a buyer could do that.

17 But the important point I want to make sure to  
18 clarify to you is that the buyer in California can't, so long as  
19 he has no ability to reduce the amount that is demanded in a  
20 given half hour.

21 SENATOR MORROW: Okay, thank you.

22 CHAIRMAN DUNN: If you can, Professor, I'm going  
23 to take you back to your report in just one second, but I want  
24 to finish up a little bit on market power. I know I'm going to  
25 return to it later when we finish all of your questions.

26 You mentioned, and maybe it had been in one of  
27 the questions, that to obtain market-based rates via FERC and  
28 its power, a player on the wholesale market had to demonstrate

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1 that they did not have market share in a given market; correct?

2 DR. WOLAK: Well, have market power.

3 CHAIRMAN DUNN: I'm sorry, market power.

4 DR. WOLAK: The way they demonstrated was by  
5 saying that -- the standard conclusion was, I have less than 20



6 percent, or have close to 20 percent, so that's okay.

7 CHAIRMAN DUNN: And those who made the filings  
8 with FERC could demonstrate that they did not have market power,  
9 that was the standard that each of them used, to the best of  
10 your knowledge?

11 DR. WOLAK: Yes.

12 CHAIRMAN DUNN: And I know you talked about it  
13 before, that that is a relatively low standard that is easy, for  
14 the most part, to surmount by any of the players on the  
15 wholesale market?

16 DR. WOLAK: Yes, and moreover, it's not even  
17 something that I believe is -- something that William Massey,  
18 who's one of the commissioners, effectively said in a speech  
19 recently, that if you can't get past this hurdle, fire your  
20 lawyer and fire your economist. So, even a FERC Commissioner  
21 admits it.

22 CHAIRMAN DUNN: If you would, share with us your  
23 thoughts, because you mentioned before how basically the  
24 standard is, hey, we've got lots of capacity in the west. Some,  
25 I think, have estimated up to 82,000 megawatts.

26 Share with us your view on how you should really  
27 count the share of the market and its implications on market  
28 power.

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1 DR. WOLAK: Well, personally, I think that market  
2 share, particularly for -- because of the way and the nature  
3 that demand is a very misleading way to try to measure the  
4 extent of market power that a firm possesses, for the simple  
5 reason that we can take a simple example.

6 Suppose that demand is a hundred, and there is  
7 essentially, say, we have a hundred firms, all only own one  
8 unit. Under those circumstances, the price will be effectively

9 infinite, but it's -- all 100 market participants know that each  
10 of their units are required to serve demand. So, they can ask  
11 whatever price they'd want. And if demand is completely  
12 inelastic, meaning completely vertical, no price response to it,  
13 the sky's the limit in terms of the price.

14 So then, if you looked at the concentration  
15 measures, the concentration measures would be roughly no one has  
16 more than one percent of the market.

17 So, that, I think, demonstrates very clearly  
18 that, depending on the state of demand, roughly, concentration  
19 measures can be extremely misleading, and moreover, very, very  
20 small values of concentration can lead to the ability of all  
21 firms to be able to essentially set whatever price they'd like.

22 CHAIRMAN DUNN: Let's bring that California and  
23 its megawatt needs.

24 From your view of it, what would be necessary for  
25 the ability to exercise market power?

26 DR. WOLAK: Effectively, given -- the unfortunate  
27 effect of California is that we're a net importer. So  
28 essentially, the level that each of the large generators have is

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1 certainly more than sufficient, I mean each of the big five  
2 generators. And certainly -- because what happens is, there  
3 become many hours of the year when roughly virtually all of the  
4 capacity they have to offer into the market is needed to serve  
5 demand.

6 And the important emphasis that I want to make  
7 there is virtually all, not all. In other words, we're not in a  
8 world of scarcity, but think of it as going back to the example  
9 of each generator owns, say, on the order of 4,000 megawatts.  
10 If essentially demand is within 4,000 megawatts of peak  
11 capacity, then they all know that some of their capacity is

12 needed to serve the market. And hence, we're in that  
13 world.

14 CHAIRMAN DUNN: From some assessment of market  
15 power, that would be market power: the ability to exercise  
16 market power?

17 DR. WOLAK: It is. I mean, we've, in fact --  
18 I've done various courses with World Bank other places, teaching  
19 people about competitive electricity markets.

20 And when you get into a circumstance where one  
21 bidder is what we call pivotal, meaning that his capacity is  
22 required to meet system demand, given the capacity of all other  
23 firms on the market, even running simulation games with people  
24 who've never played in a competitive electricity market, you hit  
25 the price cap almost every time.

26 CHAIRMAN DUNN: I think you made mention before  
27 that prior to 1890 [sic], or actually a FERC action at the same  
28 time, that clearly we had the three California utilities that

3

1 had market power because they had generation units. And that  
2 basically that changed when those generation assets were sold  
3 here in California?

4 DR. WOLAK: Yes.

5 CHAIRMAN DUNN: You also made mention that, and I  
6 want to make sure I use the correct word you used, that you can  
7 benefit a goal of market power by compacting the market, the  
8 generation market that you're in geographically.

9 DR. WOLAK: Congesting.

10 CHAIRMAN DUNN: Congesting.

11 Did that happen in the sale of the California  
12 generation assets?

13 DR. WOLAK: I guess the way I think that I  
14 understand your question is that the way that the assets were

15 certainly purchased by the market participants made that  
16 certainly a viable strategy because of the fact that most --  
17 each of the generators, for the most part, owns a significant  
18 amount of capacity in a given geographic area.

19 Now, I should also say that there are  
20 technological reasons why that would be the case. For example,  
21 a generating facility comes in the form of four units, so it  
22 probably wouldn't make a lot of sense to say, you know, each  
23 market participant owns only one of the units.

24 But even for controlling for that fact, much of  
25 the generating plants, if you like, sort of locations, there's  
26 even concentration geographically in that as well. So, for  
27 example, one would own four units here, four units nearby, and  
28 another four units nearby, rather than sort of scattered

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1 throughout the state geographically.

2 CHAIRMAN DUNN: Looking backwards at how those  
3 sales occurred, does it appear that how those sales, and how  
4 they settled into an ownership pattern maximized the opportunity  
5 for market power?

6 DR. WOLAK: Well, it certainly helped in terms of  
7 the geographic market power of the form that we've talked  
8 about. You know, as a generator, I'm always, for the most part,  
9 always on one side of a congested line with all of my capacity.

10 Now, there are exceptions among the firms. There  
11 are some firms that aren't, but certainly, I'm always going to  
12 be on one side of where the congestion is. In that sense, yes,  
13 it does make it -- therefore, it's more profitable for you to do  
14 that than if you were sort of, half your capacity was on one  
15 side and half was on the other.

16 CHAIRMAN DUNN: Senator Peace.

17 SENATOR PEACE: You mentioned in your earlier

18 testimony of the one recognition that FERC gave to the  
19 potential of the exercise of market power was the RMR contracts,  
20 the must-run contracts; correct?

21 DR. WOLAK: Correct.

22 SENATOR PEACE: Following up on the Chairman's  
23 question, I had never even heard of anybody making use of the  
24 spot market to get the power out of RMR contacted facilities  
25 until after the ISO invented the concept and the slogan,  
26 reliability through markets.

27 Can you enlighten us as to who proposed, and how  
28 the ISO came up with this idea, sometime, apparently must have

4

1 been in 1998 or 1997, whose idea was it to use the spot market  
2 rather than contracts?

3 DR. WOLAK: I think the idea was to -- I mean,  
4 the idea of RMR contracts, and true, this is, I think, a very  
5 difficult and perhaps it sort of contradicts a fundamental  
6 tentative markets, is that firms do what's in their own  
7 self-interest, not what's in society's interest. But we hope  
8 that if the market's competitive, that we will get what Adam  
9 Smith sort of likes.

10 But the difficulty was, the idea was to try to  
11 get the RMR unit owners to supply into the market, rather than  
12 to be called under RMR contracts, because RMR contracts were  
13 more expensive.

14 SENATOR PEACE: The ISO made a policy decision. I  
15 don't know whether it was encouraged by FERC in the front end,  
16 but it was ultimately approved by FERC. It was certainly never  
17 even in a conversation, either at the PUC workshops or anything,  
18 nobody even whispered the idea that RMR contracts would be  
19 fulfilled through spot market prices.

20 The ISO made this announcement that it was going

21 to use this, and have its own market mechanism, with a great  
22 deal of fanfare. They had a press conference. They rolled out  
23 their new stationary, complete with their slogan.

24 And what I find interesting, it's fair, is it  
25 not, for me to suggest that the cost of maintaining reliability  
26 ultimately proved to be very high, in part as a consequence of  
27 the reliance on the spot market?

28 If we'd had long-term RMR contracts, it would  
4

1 have been different; wouldn't it?

2 DR. WOLAK: Well, I don't know that I would have  
3 said long-term contracts, whether or not -- I mean --

4 SENATOR PEACE: Or capacity payments.

5 DR. WOLAK: I would just argue, you'd want  
6 vesting contracts, to be perfectly honest, where you, when you  
7 sell the asset, you also buy -- when you buy the asset, you also  
8 buy the obligation to supply a certain amount of the capacity --

9 SENATOR PEACE: At a known price.

10 DR. WOLAK: At a known price, yes.

11 I think the RMR contracts --

12 SENATOR PEACE: The ISO chose to pursue a  
13 different path.

14 DR. WOLAK: In many ways, I think it was because  
15 of the fact that they didn't have much choice because of the  
16 fact that, you know, once again, it was a problem of the  
17 generators --

18 SENATOR PEACE: I mean --

19 DR. WOLAK: In other words, it gets back to FERC  
20 and --

21 SENATOR PEACE: FERC wouldn't let them -- FERC  
22 wouldn't let the ISO use capacity payments, or other long term  
23 contracting mechanisms, in order to flatten the price?

24 DR. WOLAK: Well, I guess --

25 SENATOR PEACE: I'm just confused, because I've  
26 heard so much about FERC saying that California should have been  
27 in long-term contracts. This is stunning.

28 DR. WOLAK: Well, I think it does get to an issue  
4

1 that FERC has had a very difficult time with, is the fact that  
2 firms don't give up market power voluntarily. And one of the  
3 things that came up in the RMR negotiations was, as someone who  
4 was participating in it, is we need to restructure the RMR  
5 contracts. They are very expensive --

6 SENATOR PEACE: Do you recall whether the same  
7 group of a hundred percent who voted to lift the cap, whether or  
8 not they also were unanimous in their support for creation of  
9 the notion of using the market, rather than capacity payments or  
10 other mechanisms for RMR contracts?

11 DR. WOLAK: Once again, I --

12 SENATOR PEACE: Do you recall any marketer or  
13 generator who was represented on the board ever advocating  
14 something other than using the spot market?

15 DR. WOLAK: I don't know. I'm sorry.

16 CHAIRMAN DUNN: Let me return to your reports  
17 finally. Unfortunately, we knew that this was going to happen  
18 because we had a lot of new terms, et cetera, and you being our  
19 first witness, you unfortunately got the lucky task of doing a  
20 lot of definitions, Professor, so thank you.

21 But I want to welcome another guest of the  
22 committee who is sitting to my right over here, Assemblywoman  
23 Barbara Matthews as well.

24 You issued the August '98 report, which was  
25 basically on a request by FERC, which was the first at least  
26 suggestion that there might be market power in play in the

27 California energy market; correct?

28 DR. WOLAK: Uh-huh.

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1 CHAIRMAN DUNN: Again, very quickly, if you  
2 would, Professor, what were the conclusions of that report?

3 DR. WOLAK: One of the big ones was the current  
4 way that the RMR contracts were structured was essentially  
5 allowing generators to leverage, if you like, the RMR payment  
6 mechanism in to essentially benefit other generators that were  
7 -- that they owned that were non-RMR generators.

8 In other words, use, if you like, the way that  
9 they were compensated for their providing the RMR contract  
10 quantity to essentially raise the price that occurred in the  
11 market. And that was an issue that was -- played a major role.

12 And then in particular, sort of the first fact,  
13 the first time that the report mentioned the fact of the, if you  
14 like, the difficulty with overreliance on the spot market,  
15 trying to say, look there needs to be some longer term contracts  
16 to essentially -- between loads and generation, as well as to  
17 try to get the demand side involved in the market as well. And  
18 it gave numerous suggestions along those lines.

19 CHAIRMAN DUNN: Can you share some of those  
20 suggestions briefly with us, Professor?

21 DR. WOLAK: Things like, that are still being  
22 debated at the moment. Things like real-time pricing and things  
23 like that, as well as allowing retail competition to essentially  
24 separate distribution from supply, so that essentially you could  
25 get the sorts of signals to -- in other words, I guess the best  
26 way I could think of it is, let Enron work for you as opposed to  
27 against you. If Enron is a competitive retailer, then they will  
28 be trying to attract customers on the buy side.

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1 CHAIRMAN DUNN: Senator Johannessen.

2 SENATOR JOHANNESSEN: Thank you, Mr. Chairman.

3 In making this report, did you try to look a few  
4 years in the past in order to determine a method by which the  
5 marketplace could be manipulated with the decisions that were  
6 made? I'm referring to even as far back as '93, '94, '95, prior  
7 to this deregulation that we did in '96.

8 In that report or in that study that you made for  
9 this report, did you look into as to who was pushing for this  
10 deregulation, and why, perhaps, they were doing that?

11 DR. WOLAK: No, not really. It was very much  
12 focused on how is market currently performing, and how can we  
13 can make it work better into the future.

14 SENATOR JOHANNESSEN: Mr. Chairman, I'm assuming  
15 we'll go back to that question some time later.

16 So, what you basically then dealt with is what  
17 the market was in 1998?

18 DR. WOLAK: Yes.

19 SENATOR JOHANNESSEN: And in 1998, FERC's  
20 position was that we needed additional energy generated for  
21 California, or was that earlier? Was that '96 when they asked  
22 that?

23 DR. WOLAK: I'm not sure that FERC ever really  
24 thought that California had a generation inadequacy. In fact,  
25 I think that the sort of prevailing view at the time was the  
26 west and California probably had excess capacity, or enough.

27 SENATOR JOHANNESSEN: Well, in '96 we were told  
28 we had about a 30 percent more capacity than was necessary in

1 '96, which was the reason why the generators and the utilities  
2 lobbied for and got the deregulation, which in itself is  
3 somewhat interesting.

4                   Then apparently on September 25th, 1996, there  
5                   was a meeting with the utilities. And I believe it was Phoenix,  
6                   Arizona. Are you familiar with that?

7                   DR. WOLAK: No, sorry.

8                   SENATOR JOHANNESSEN: Are you familiar with the  
9                   fact that when the PUC stated that there was an additional  
10                  generating capacity needed for California, and the utilities  
11                  objected to that, and that they, in fact, went to FERC. And  
12                  FERC agreed with the utilities, and no additional facilities  
13                  were required.

14                  Are you familiar with the report that \$100  
15                  million was paid to some of the potential generators, by the  
16                  utilities, not to generate and build generation capacity in  
17                  California?

18                  DR. WOLAK: I've heard rumors, yes.

19                  SENATOR JOHANNESSEN: Can we go down that line  
20                  for just a moment? Let me know if I stray too far off.

21                  CHAIRMAN DUNN: We'll catch you quickly; don't  
22                  worry.

23                  SENATOR JOHANNESSEN: Thank you.

24                  In the agreement that was reached in Arizona, and  
25                  where there are, quite frankly, some pretty good evidence that  
26                  it was reached, the decision was made and the statement was  
27                  made, how do we position ourselves to take advantage of the  
28                  energy problems that are going to be developing in

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1                  California.

2                  CHAIRMAN DUNN: Senator, if I could just add one  
3                  thing in here, which may be outside the scope of this particular  
4                  witness.

5                  At least if I draw from media reports on it, the  
6                  event you're referring to related to the gas side of it, as



10 over the past three years, it's precisely that.

11 I mean, the one thing that I always like to  
12 emphasize is that for the first two years, because we had lots  
13 of imports ready to come into California from the Pacific  
14 northwest as well as from the desert southwest, effectively  
15 things worked fairly well. And moreover, I think there's a  
16 twelve-month period where things in the electricity market  
17 worked very good.

18 But to the extent that supply becomes  
19 constrained, and now, once again, and not shortage conditions  
20 but just supply relative to demand, then it becomes much easier.  
21 We get back into the world where, you know, I talked about if  
22 demand is a hundred, and supply is a hundred, then everybody can  
23 name their price because everybody is needed to serve that  
24 inelastic demand. And the demand for gas is fairly inelastic,  
25 too, probably a little more price-elastic just because we passed  
26 through those prices to residential consumers sort of as they're  
27 incurred.

28 SENATOR JOHANNESSEN: One more, if I may.

4

1 The future market that was established that dealt  
2 specifically in a part, and later on the gas market got involved  
3 in it, too, obviously, but the ability to a narrow group of  
4 major producers to use the future market by determining in what  
5 area the temperatures would be low, or temperatures would be  
6 high, what the demand would be in certain areas -- would that,  
7 the manipulation of a market, a free market, if you will, if the  
8 manipulation of that market was made based on the calculations  
9 that is being done by those, in this case the providing  
10 generators, if you will, and if there in fact were a tentative  
11 agreement --

12 DR. WOLAK: We're getting into some hypotheticals

13 here.

14 SENATOR JOHANNESSEN: But that's, at least in my  
15 particular case, I'd like to know, because it could make me  
16 change my total outlook of how I believe in private enterprise.

17 But if that were the case, could that be the  
18 cause, as a result of that, could that be the cause of the  
19 problem we now have in California?

20 Don't misunderstand me. Mea culpa. We in  
21 California made some bad mistakes. Don't misunderstand me.

22 But could that be it?

23 DR. WOLAK: I think that it's important to  
24 remember, and this is where sort of I think retail competition  
25 and the other things come into the play, is that for a market to  
26 work, you know, go back to my car salesman example. It's that  
27 if someone whispers in the ear of the car salesman that I will  
28 make a purchase from him, and I won't leave the building until I

4

1 do, I mean, he's going to be able to name whatever price he'd  
2 like.

3 So, what makes a market work is a demand that is,  
4 if you like, is incented as strongly as the supply is. That's  
5 sort of, you know, yes, you can fault the generators for trying  
6 to essentially do the things that they tried to do to maximize  
7 their profits. But on the other hand, we need the  
8 countervailing force, which is the demand side, to be in there  
9 to saying, well, we're going to build a new pipeline capacity to  
10 prevent that. We're going to build the new generating capacity  
11 to serve demand to prevent that. So, you need a demand side  
12 that is motivated to do that.

13 That's in part what was missing. I think in  
14 large part what was missing is that you need to essentially get  
15 the incentives in for the demand side to be as aggressive in

16 protecting consumers in order to attract final customers that  
17 the supply side is in terms of setting higher prices to make as  
18 much money for their shareholders.

19 SENATOR JOHANNESSEN: Thank you.

20 CHAIRMAN DUNN: If I can, with the indulgence of  
21 the committee, what I'd like to really quickly, Professor, is,  
22 we've been trying to get through your reports. I want to do  
23 that as quickly as possible.

24 And then we'll open it back up to the rest of  
25 the committee, but I want to make sure we do that, particularly  
26 before Evelyn raises her hand and says she needs to replace  
27 paper, and take a few moments' break.

28 So, we've got the August '98. What was the next  
5

1 report that you were involved in, Professor?

2 DR. WOLAK: There is a wide variety of opinions  
3 that get issued all of the time. Perhaps the next report that  
4 was fairly sizeable reported on the performance of the market,  
5 was the March of 1999 report that looked into essentially --  
6 first started reporting, if you like, measures of the extent of  
7 market power that we think was exercised in the energy market.  
8 There a sort of a methodology was laid out and discussed to  
9 essentially try to quantify that.

10 CHAIRMAN DUNN: Okay. If you would, just address  
11 three questions with respect to that report.

12 What prompted conducting the report? What led up  
13 to the report? What did you do to generate the report? And  
14 quickly, what are the summaries, although you just touched upon  
15 it?

16 DR. WOLAK: I think the report was just more of  
17 -- it had been a while since we'd reported. We were supposed to  
18 report on -- the major motivation for the report was, okay, as a

19 result of the August 1998 report, we made a bunch of  
20 recommendations to FERC for market rule changes to implement,  
21 and to, in particular, to fix the RMR contracts, as well as  
22 other sorts of things, and many of these things that had been  
23 implemented.

24 And so, FERC basically said, we would like you to  
25 report on how well you think these sorts of things that have  
26 been implemented have in fact worked. So, that was the  
27 motivation for the report.

28 In terms of the report on the methodology, it was  
5

1 to essentially take FERC at its word on what a competitive  
2 market is. What they, in their market-based rate filings say,  
3 it is a competitive market where price is set equal to the price  
4 of the highest cost unit operating, is sort of the standard.  
5 And we said, okay, let's take that standard and compare how  
6 close are we getting to that standard in terms of actual market  
7 prices.

8 So, we compute both a difference in the average  
9 price between the actual price in the market and that  
10 competitive benchmark price, averaged over all the megawatts  
11 sold, as well as, you know, sort of how much, if you like, the  
12 total amount of overpayment was, you know, sort of magnitudes of  
13 that.

14 CHAIRMAN DUNN: Any summary of conclusions?

15 DR. WOLAK: I guess the good news was, is  
16 certainly in the off-peak months of the year, excluding, say,  
17 July, August, and September, the competitive benchmark came very  
18 close to the actual market outcomes. In other words, average  
19 prices were very, very close to what we'd expect from firms  
20 doing the competitive benchmark behavior.

21 CHAIRMAN DUNN: Referring to July, August,

22 September of '98.

23 DR. WOLAK: With the exception of those months.

24 Now, within those months, significant deviations.

25 In particular, fairly sizeable deviations from the competitive  
26 benchmark, as you might expect, because we get into the world of  
27 ten firms, and demand is ten. It pretty much is not a market,  
28 but ask-and-you-shall-receive in terms of the prices that you<sub>5</sub>

1 can get, with the only thing really limiting what price you can  
2 set, given how much was traded on the spot market, is just  
3 simply the price gap.

4 CHAIRMAN DUNN: Can you try one more time in lay  
5 terms, describe what you mean by the competitive benchmark.

6 DR. WOLAK: It's -- the standard thing is, if I  
7 am a firm who believes that I have no ability to influence the  
8 market price through my behavior, or what I supply, or what I  
9 bid, or whatever, what I want to -- you could kind of think of  
10 it as, I view the market clearing price as a random variable.  
11 In other words, as something that fluctuates independent of any  
12 action that I take.

13 And so, what I would like to do, what will  
14 maximize the profits that I will earn, once again, is to  
15 essentially bid my marginal operating cost. Because if I get  
16 dispatched, then essentially that must mean the market clearing  
17 price is above my operating cost, so I am earning returns in  
18 excess of my operating cost, which is something I would like to  
19 do.

20 On the other hand, if the price is below my  
21 marginal cost of operating, the essentially I'm happy not to be  
22 dispatched, because I would be losing money on every unit that I  
23 sell.

24 And so, that is the behavior that we'd expect



25 from a firm that has no ability to influence the market price  
 26 because that's the behavior that's going to cause it to earn as  
 27 much profits as possible.

28 On the other hand, if I'm a firm with the ability<sup>5</sup>

1 to influence the market price, then I will bid in excess of my  
 2 marginal cost because I perceive that, gee, a bid in excess of  
 3 marginal cost increases the likelihood that the market price is  
 4 in excess of my marginal cost.

5 And there is -- the trade-off there is, I get a  
 6 higher price, but I may sell a little less. But if demand is  
 7 particularly inelastic to price, the price increase I get is  
 8 significantly more than the demand reduction that I experience,  
 9 and so it becomes profitable for me to do that. And then the  
 10 only thing that limits that is my competitor's response.

11 CHAIRMAN DUNN: And we're going to be getting to  
 12 that.

13 So, if I understand what you're saying, in the  
 14 March of '99 report, what you basically said is, things were  
 15 doing fine other than in July, August, September of 1998, when  
 16 you found that there was some players that were operating above  
 17 their competitive benchmark.

18 DR. WOLAK: You could think of -- the distinction  
 19 would be as quantifying the amount of the extent of market power  
 20 exercise versus who are the participants that are exercising it.  
 21 That report was focused much more on just saying -- try to alert  
 22 FERC to the fact that, look, market power is being exercised in  
 23 this market. You have set this benchmark up in your  
 24 market-based rate filing to say no firm has market power.

25 Well, if we take seriously the market outcome  
 26 that should occur if no firm has market power, here are the  
 27 prices that are being set, the prices that are actually being

28 set in the market, particularly in the summer months, are 5

1 significantly in excess of that. So please, FERC, this is  
2 something you should be concerned about.

3 CHAIRMAN DUNN: Did you identify who may have  
4 been engaged in that behavior?

5 DR. WOLAK: No, we didn't. It was more, if you'd  
6 like, we'd be happy to sort of take you through, help you to  
7 look at what's going on.

8 CHAIRMAN DUNN: You're referring to this is what  
9 you said to FERC?

10 DR. WOLAK: Yes.

11 CHAIRMAN DUNN: You're not saying that to us?

12 DR. WOLAK: No, no. I mean, in many, many, many  
13 occasions with almost every report, we'd say we'd be happy to  
14 provide any information on specific players that you'd be  
15 interested in. And they never took us up on it.

16 SENATOR PEACE: During this time, were you also  
17 in contact with the Power Exchange's Market Surveillance  
18 Committee members?

19 DR. WOLAK: Oh, yes.

20 SENATOR PEACE: And at any time, did any of those  
21 members share with you --

22 CHAIRMAN DUNN: May I interrupt, Senator.

23 For everybody's edification, the Power Exchange  
24 also had a Market Surveillance Committee, which is different  
25 than what the Professor serves upon, which is the ISO Market  
26 Surveillance Committee.

27 DR. WOLAK: To distinguish the product, they  
28 called it the Market Monitoring Committee.

5

1 SENATOR PEACE: At any time, did any of the  
Page 49

2 members of the Power Exchange's Market Monitoring Committee  
3 share with you the fact that they were told by Power Exchange  
4 management to change their Market Monitoring reports because  
5 they, quote, "didn't want to discourage their customers'  
6 participation in the Exchange?"

7 DR. WOLAK: I think the Market Monitoring  
8 Committee certainly felt the pressure, but, I mean, that was the  
9 same pressure that the Market Surveillance Committee felt. But  
10 we're independent committees, so --

11 SENATOR PEACE: So, you also were pressured by  
12 the ISO management?

13 DR. WOLAK: No, no. I mean, it's more, as I say,  
14 I think it's only natural that things like that would happen.

15 SENATOR PEACE: So, Market Monitoring Committee  
16 members of the Power Exchange did share with you the fact that  
17 they were being pressured by Power Exchange board members not  
18 only not to release, but to in fact change their Market  
19 Monitoring reports?

20 DR. WOLAK: Well, yeah. I mean, I think it's  
21 important -- I think there could be a difference in terms of  
22 pressure, or just, you know, please take it easy on us, sorts of  
23 things. But yeah, sure.

24 SENATOR PEACE: Mr. Chairman, just for the  
25 record, I'd request that the committee look into requesting the  
26 appearance of the appropriate witnesses of the Market Monitoring  
27 Committee in the Power Exchange as well as the other members of  
28 the Market Surveillance Committee --

5

1 CHAIRMAN DUNN: We've already started, Senator.

2 SENATOR PEACE: -- reminding witnesses that they  
3 are under oath, as well as a list of board members, which I'd be  
4 happy to provide to you, and some written documentation in which

5 Market Monitoring Committee members were threatened if in fact  
6 they published documents that they had completed and were  
7 prepared to, in fact, publish. And were told, if they did that,  
8 that participants in the Power Exchange would withdraw their  
9 participation, and management therefore asked them not to  
10 produce their report.

11 CHAIRMAN DUNN: It will be done, Senator.

12 DR. WOLAK: I guess what I wanted to emphasize  
13 here is that certainly make the distinction between ask and -- I  
14 mean, I think that the ISO, and I very much want to make this  
15 clear, I think the ISO management is very open to the reports  
16 that the Market Surveillance Committee filed.

17 I mean, a lot of times, I'm sure, they didn't  
18 like some of the conclusions that we had, but they never would  
19 say, oh, please, don't publish that, please don't say that.  
20 They would certainly offer input, but I think they were --

21 SENATOR PEACE: On the other hand --

22 DR. WOLAK: -- my experience is very much --

23 SENATOR PEACE: -- on at least one occasion, the  
24 Market Monitoring Committee at the Power Exchange -- at a time  
25 in which there was a great deal of communication between the ISO  
26 and the PX, and arguments about what was happening, and the  
27 Power Exchange potentially being influenced by what was going on  
28 in the ISO -- during that period of time there was a completed

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1 written Market Monitoring report that, to this day, has never  
2 been made public because it was quashed by the PX management.

3 Are you familiar with that? You're under oath.

4 I'm glad you find it funny.

5 DR. WOLAK: No, I don't.

6 SENATOR PEACE: Are you familiar with that?

7 DR. WOLAK: I'm familiar that something like that

8 happened. I mean, I think there are reports, yes.

9 SENATOR PEACE: Is it not true that the filing of  
10 Market Monitoring reports and Market Surveillance reports are,  
11 in fact, a part of the filed FERC-approved market-based tariff  
12 for each of the market participants?

13 DR. WOLAK: Yes, and that's why, as I say --

14 SENATOR PEACE: So, the timely and accurate  
15 reporting of the Market Monitoring Committees, respective  
16 committees, are part of the legally filed tariff agreed to by  
17 the firms.

18 DR. WOLAK: Yes.

19 SENATOR PEACE: The same firms who are now before  
20 the FERC and must get a renewal of their right to participate  
21 under market-based tariffs in order to continue to charge  
22 market-based prices this summer; is that correct.

23 DR. WOLAK: Yes.

24 SENATOR PEACE: And it requires a majority vote  
25 of the now sitting FERC commissioners, and a finding that they  
26 are not exercising market power, for them -- and that they are  
27 following the rules -- for them to extend their right to charge  
28 market-based rates?

5

1 DR. WOLAK: Yeah, but I would clarify to say,  
2 they do not have the ability to exercise market power, which is  
3 a higher standard.

4 But, I mean, in that sense, I think the ISO  
5 management was very aware of that tariff and would take our  
6 reports -- they may not have agreed with it, but they would file  
7 them, and file them in a timely manner.

8 SENATOR PEACE: Contrasted with the Power  
9 Exchange's Monitoring program.

10 DR. WOLAK: Yeah, but I would really prefer to

11 have you ask them. But, I mean, I can only confirm sort of  
12 the -- to the extent that I sort of heard the rumor, as you  
13 say.

14 CHAIRMAN DUNN: Professor, let's go on to the  
15 next, although I know there were lots of opinions, and et  
16 cetera, issued.

17 The next key report was October '99, if I  
18 remember correctly?

19 DR. WOLAK: Yes.

20 CHAIRMAN DUNN: Describe what prompted it, what  
21 you did leading up to issuing the report, and a quick summary of  
22 the report.

23 DR. WOLAK: That was just more, once again, there  
24 will always be the report on further market rule changes. And  
25 there, I guess, the big issue there was -- the good news was  
26 that that we, once again, updated the market performance  
27 measures that we computed in terms of competitive benchmark  
28 versus actual market prices. And the good news was that, you  
5

1 know, 1999 was a reasonably good year. I mean, relative to the  
2 summer of 1998, the summer of 1999 was very, very calm, and due  
3 in large part, in retrospect and at the time we noted as well,  
4 is just, it was a very good water year in the Pacific Northwest  
5 as well as in California. Moreover, a mild summer and all kinds  
6 of things, all the conditions kind of give you the impression  
7 that you'd solved all the problems.

8 But, in fact, that was the whole purpose of --  
9 one of the big themes of the report was to try to say, it's  
10 really that; it's not that you've solved all the problems with  
11 the market. The fundamental problems still remain, and those  
12 are: an overreliance on the spot market; a complete lack of  
13 demand responsiveness to real-time price signals. And now is

14 the golden opportunity to solve these problems and outline a  
15 scheme for introducing retail competition, to try to get these  
16 sorts of forward contracting in place. Outlined, you know,  
17 various other schemes.

18 We were in a position where the average price was  
19 \$30 a megawatt, and the implicit price and what the  
20 investor-owned utilities were paying was between \$65 and \$70.  
21 So, it Was basically a perfect time to act. Unfortunately, it  
22 didn't.

23 CHAIRMAN DUNN: Was there any comment in the  
24 October '99 report regarding the exercise of market power?

25 DR. WOLAK: Yes, that's what I just talked about,  
26 in the sense that yes, market power. A similar pattern existed  
27 in the sense that during the peak months, we saw some but  
28 certainly not at the levels that we saw during 1998.

6

1 And moreover, a very -- not very well understood  
2 result is, if you took, say, the period from October of 1998 to  
3 September of 1999, and you said, okay, let's compare the average  
4 competitive benchmark price to the average market clearing  
5 price, they were pretty similar.

6 In other words, you could argue that we had a  
7 one-year period where pretty much the market achieved, you know,  
8 to -- true, the calculations we do very much bias against the  
9 finding of market power, but came very close to achieving the  
10 competitive market benchmark. With the point being, the reason  
11 I make this point is to say that many commentators have said,  
12 this is an unreasonable standard. Well, if it was an reasonable  
13 standard, we attained it for a year, for an entire year, an  
14 entire cycle in the market. So, I guess, at least I would argue  
15 that it can't be that unreasonable a standard.

16 CHAIRMAN DUNN: And again, trying to put lay

17 terms out there, that basically the consensus was, it was  
18 peaceful year primarily due to the water.

19 DR. WOLAK: Yes.

20 CHAIRMAN DUNN: But in fact, the underlying  
21 problem still existed.

22 DR. WOLAK: Were still there. I mean, we still  
23 had an overreliance on the spot market. And when there's a lot  
24 of excess water in the Pacific Northwest, ready to come into  
25 California, think of the story we talked about with the  
26 incentive to exercise unilateral market power, is that how much  
27 can I increase price versus how much do I lose in sales.

28 Well, if there's a lot of capacity out there 6

1 being ready to import, if I try to increase price just a little  
2 bit, the hydro supplier in the Pacific Northwest comes rushing  
3 in. And so essentially I, as an in-state generator, attempting  
4 to exercise market power, the PQ trade-off -- price quantity  
5 trade-off -- to me says I don't get much price increase, and I  
6 lose a whole lot of quantity, so I'm going to bid very  
7 aggressively.

8 CHAIRMAN DUNN: The water acted as a check.

9 DR. WOLAK: Yes.

10 CHAIRMAN DUNN: But the underlying problem, from  
11 your perspective, the committee's perspective, was still there?

12 DR. WOLAK: Yes.

13 CHAIRMAN DUNN: And that was identified in that  
14 report.

15 DR. WOLAK: Yes.

16 CHAIRMAN DUNN: It's my understanding, Professor,  
17 that at this time there were ongoing discussions between the  
18 Market Surveillance Committee and FERC regarding the definition  
19 of market power?



20 DR. WOLAK: Yes.

21 CHAIRMAN DUNN: Can you tell us about that?

22 DR. WOLAK: Well, we had -- one of the things  
23 that was started, which I think was a very positive force, to in  
24 some sense solve the market power problem, or at least get a  
25 handle on the market power problem, was to have meetings between  
26 the FERC staff that essentially monitors the markets and the  
27 various market monitors at the ISOs. And we had a meeting in  
28 the spring of 2000 that essentially -- where we discussed these  
6

1 sorts of issues.

2 And the one thing, at least my mission in  
3 attending this meeting was to try to get FERC to tell me, what  
4 is market power. And essentially found it extremely frustrating  
5 for the simple reason that I would ask the question, okay what  
6 is market power? In other words, what is market power that  
7 generators are not supposed to exercise under the just and  
8 reasonable standards of the Federal Power Act? What is that  
9 action?

10 It was more of a -- it took the form of, well,  
11 you tell me. And I would say, well, this is my definition. And  
12 the response would be, well, I'm not sure that that's market  
13 power. Okay, well then, what is it?

14 CHAIRMAN DUNN: Can you share your definition  
15 again? I know you did it before.

16 DR. WOLAK: Yes, and I would say the definition  
17 was the ability to unilaterally through your own actions raise  
18 the market price and profit from it. In other words, it's  
19 profitable for you to essentially try to raise your bid price to  
20 essentially increase the market clearing price, and you profited  
21 from that by doing that.

22 And that -- it was not very successful and never

23 really got a clear, clear definition, or any definition, of  
24 market power, which makes it very difficult, if you're the  
25 Market Surveillance Committee, monitoring for the exercise of  
26 the market power, and you're not told what market power is.  
27 It's very difficult to look for something that you don't know  
28 what it is.

6

1 CHAIRMAN DUNN: Have you been, to the best of  
2 your knowledge, provided any further guidance from FERC on the  
3 definition of market power to this day?

4 DR. WOLAK: No.

5 CHAIRMAN DUNN: Basically it's, if I can use the  
6 old term, I can't define it, but I know it when I see it?

7 DR. WOLAK: That could be one way. That'd be  
8 nice if they would even do that. That would be very good.

9 CHAIRMAN DUNN: And to this day, has FERC ever  
10 seen it?

11 DR. WOLAK: They have ordered some refunds. I  
12 mean, very sort of small magnitudes relative to the sort of the  
13 magnitudes of, I think, that at least the committee that I chair  
14 has estimated exist. It's sort of in the round-off era, I  
15 guess.

16 CHAIRMAN DUNN: You last spoke about the October  
17 '99 report. Let's jump up to your March of 2000 report. Same  
18 questions: What prompted that particular report? What did you  
19 do to generate the report? And the conclusions in the report?

20 DR. WOLAK: There was the issue that I think  
21 Senator Peace was referring to, of the issue was, we will  
22 increase the price cap to 750, but if the necessary changes in  
23 the market rules are not in place by the summer of 2000, we  
24 reserve the right to reduce the price cap back down to 250.

25 So, we were asked by the ISO board to comment on

26 that. And in that report was sort of, I guess, as sort of --  
27 without sounding like Chicken Little in terms of saying, the sky  
28 is falling, was our best attempt to sort of say, the sky could  
6

1 fall this summer.

2 CHAIRMAN DUNN: Referring to the summer of  
3 2000?

4 DR. WOLAK: Yes, summer of 2000, and saying, none  
5 of the structural changes that are supposed to be there to be  
6 able to keep the price cap at 750 through the summer have really  
7 been implemented. We don't see any really tangible, sizeable,  
8 demand responsiveness in place. The utilities haven't really  
9 taken advantage of their abilities to hedge in the block  
10 forwards market, or just to sign bilateral contracts in general.

11 So, if what happens is we have a low water year,  
12 we could -- and demand grows, what we presented in the report  
13 was essentially saying, okay, suppose that the 750 price cap,  
14 you hit the price cap as many times as you hit it in 1998 or you  
15 hit it in 1999, how much damage would that do in terms of lost  
16 CTC payments, and sort of the magnitudes that would exist.

17 But clearly, the potential existed for hitting it  
18 much, much more frequently just because demand grew, and if  
19 water conditions in '98 were certainly, in the entire west were  
20 probably about as -- were not as bad as they were in 2000.

21 CHAIRMAN DUNN: Professor, if I can, treat some  
22 of us as though we're freshmen in the California energy market.

23 What do you mean by the 750 price cap?

24 DR. WOLAK: The ISO has a price cap on the --  
25 it's a very good question, because it's not really a price cap,  
26 at least the way FERC interprets it. It's a purchase price cap.

27 So, the ISO is essentially saying, the maximum we  
28 are willing to buy electricity for is \$750 per megawatt in the

1 real-time market. And so essentially, if a generator bids above  
2 750, his bid will not be accepted in the real-time market, but  
3 he still has a chance -- at least it may be in real time if he's  
4 an out-of-state generator selling for more, which is one of the  
5 things that happened during the summer of 2000.

6 But the idea was, up until then, no purchases had  
7 been made above the ISO's price gap.

8 CHAIRMAN DUNN: Those occurred at the end of  
9 spring and summer, and we're going to get to your late summer  
10 report in just a second.

11 Any other comments on the March 2000 report?

12 DR. WOLAK: Just that it -- the other thing that  
13 happened was that we were asked to offer an opinion on whether  
14 or not the price cap should be set back at 250 or kept at 750,  
15 and there was sort of division among the committee on that one.  
16 So, the resolution was, we offer no opinion, for the simple  
17 reason of just figuring to leave that to the market, and more  
18 offering the facts of look, the potential downside can be very  
19 large at 750 relative to 250.

20 CHAIRMAN DUNN: Can you share with us, again very  
21 quickly, what was the core debate?

22 DR. WOLAK: Well, the core debate goes as, I  
23 guess, the way that I would view it is, in a market where  
24 everyone's on the spot market, to the extent that they are, and  
25 you get into periods when one person or several people are  
26 required to supply to the market in order for demand to equal  
27 supply, meaning that -- and I'm a firm that knows that I am  
28 required to meet the demand that's out there, I can

1 essentially -- the sky's the limit on the price that I can name  
2 for the capacity that is essential to serve demand.

3                   So, the view would be, well, so long as the price  
4 cap is significantly above your operating cost, a 750 versus 250  
5 price cap, there really is no difference. In terms of the  
6 signals that it's providing, you're still allowing generators to  
7 earn a significant amount of money at the 250 price cap. Giving  
8 them a 750 price cap is simply just saying, you know, we'll  
9 reward you even more.

10                  And that's where the issue of forward contracting  
11 comes in, is when you forward contract generators, then  
12 essentially they will not want to just supply that little amount  
13 that they're pivotal and bid very high for that, but they will,  
14 in fact, find it in their interest to bid a greater magnitude  
15 than that.

16                  So, the difficulty, it's really -- in a world in  
17 which everybody's on the spot market, and you've got this  
18 inelastic demand, you can get into these periods. And those  
19 were certainly very prevalent in the summer of 2000.

20                  CHAIRMAN DUNN: Senator Peace.

21                  SENATOR PEACE: The movement of the price cap to  
22 750, the presumed stabilization of that movement upward, had an  
23 effect on the forward market; didn't it.

24                  DR. WOLAK: Oh, yes.

25                  SENATOR PEACE: So, forward market prices began  
26 to rise as the market participants anticipated that the ISO  
27 would not respond by putting the cap back to 250 or to 150; is  
28 that correct?

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1                  DR. WOLAK: There certainly -- that was the  
2 rumors.

3                  SENATOR PEACE: And that was part of the reason,  
4 presumably, why a lot of buyers were reluctant to enter into  
5 forward market contracts, because the forward market prices

6 started going up pretty dramatically.

7 Was there also, part of the argument associated  
8 with the price cap was also built around the notion that FERC  
9 only allowed that price cap to be applied to in-market  
10 participants; is that not correct?

11 DR. WOLAK: Well, I guess the way that I would  
12 explain it is, FERC rationalized it to itself as a purchase  
13 price cap, not a price cap.

14 SENATOR PEACE: Which had the effect, for our  
15 terminology, to mean that the price cap only applied to  
16 in-market participants?

17 DR. WOLAK: Yes.

18 SENATOR PEACE: And the munis, including LAWP,  
19 chose -- chose -- not to be in-market participants; is that not  
20 correct?

21 DR. WOLAK: Yes.

22 SENATOR PEACE: And as a result, they were not  
23 subject to any price caps; is that right?

24 DR. WOLAK: Among other market participants, yes.

25 SENATOR PEACE: So, by not joining the ISO, by  
26 staying as out-of-market participants, the munis in effect  
27 decreased the number of megawatts available in-market, and thus  
28 forced the ISO to go out-of-market for more supply than they<sub>6</sub>

1 otherwise would have had available to them had the munis joined  
2 the ISO; is that not correct?

3 DR. WOLAK: Well, there certainly was the  
4 incentive to do that, yes.

5 But I think the important thing to note is that  
6 that sort of --

7 SENATOR PEACE: The argument that was being given  
8 to me by those who were arguing against the price cap was, and

9 which included ISO management, was that if you put price cap in,  
10 you're just going to force us to go to more out-of-market  
11 sellers.

12 DR. WOLAK: Yes, but I think the mechanism that  
13 that happened is the following. Is that if I'm a generator  
14 in-state, what I will do on a day ahead basis is schedule my  
15 generation out of the state, which essentially then tells --

16 SENATOR PEACE: Wheeling.

17 DR. WOLAK: And then, what happens is that I sell  
18 to a willing buyer outside the state who knows the expectation  
19 that given that it's -- --

20 SENATOR PEACE: So you had both in-market,  
21 alleged in-market participants who laundered their --

22 CHAIRMAN DUNN: Senator, I just want to interrupt  
23 a second.

24 Can you finish the thought you were just about to  
25 say about what happens after a sale out of state. I just want  
26 to make sure that's clear for everybody.

27 DR. WOLAK: Sure.

28 The important thing that I think's very important  
6

1 to note is the distinction between what an import looks like to  
2 the ISO versus what an in-state supply looks like to the ISO.

3 There is associated with an import just simply  
4 power flow into the ISO control area. You know, you have no  
5 idea how to identify a generator that that import's associated  
6 with. It simply is the fact more power is being supplied  
7 outside of California than is being consumed outside of  
8 California, so the power just flows into California.

9 And whereas in California, you can actually see  
10 that, yes, this generator is producing at 550, and it is this  
11 generator, and he's the guy -- he is the generator that bid into

12 the ISO real-time market and got dispatched, et cetera.

13 So, the unique feature that this means is that if  
14 you were the ISO, and you set a price cap at whatever level you  
15 might want to set the price cap. And if I'm a generator, and I  
16 know that you're going to need the generation that I have, then  
17 in real time, then what I can do is schedule outside the state.  
18 So, then the control area outside the state says, gee, we've got  
19 more generation coming from California, so we don't need to turn  
20 on the generation where we're located. So therefore, we won't  
21 turn it on.

22 Then come real-time. The ISO says, oh, gee,  
23 we're short a large amount of capacity because of the fact that  
24 some of this generated has been schedule outside the state. So  
25 then they scramble to the control areas surrounding California  
26 to try to buy generation.

27 But because of the fact that these generators may  
28 not have as much advance notice as they might have needed,

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1 you're probably going to get the more expensive generators, or  
2 they're going to demand a premium to ask you to turn on. And  
3 so, therein lies sort of the -- it's not just the munis. It's  
4 anyone can do this.

5 SENATOR PEACE: So there was a concern that a cap  
6 would encourage the economic incentives for electrons to end up  
7 and identifying themselves as out-of-market electrons, rather  
8 than in-market electrons.

9 And that was accomplished in a variety of ways by  
10 private generators owning in-state electrons, selling them out  
11 of the state, and laundering them back into the state. And in  
12 the case of munis, by simply not joining the ISO so that they  
13 would still be viewed as out-of-market participants.

14 Now, there was an ongoing negotiation at that



15 time to get the munis, who had committed in '96 to join the  
16 ISO. This is an important piece of the puzzle because it goes  
17 back to your point about transmission constriction.

18 The major issue was driven basically by LAWP, and  
19 it was over the price of their transmission system; wasn't it?

20 DR. WOLAK: That's my understanding, yes.

21 SENATOR PEACE: And at one point, the  
22 Legislature, actually the Senate, put in the \$300 million that  
23 was the difference between the parties in the negotiating, and  
24 just said, we'll have taxpayers pay the difference, just to get  
25 LA and the other munis into the market; didn't we?

26 DR. WOLAK: You're getting beyond me.

27 SENATOR PEACE: We did.

28 And there was a great deal of lobbying by the  
7

1 same parties who ultimately voted to lift the cap to make sure  
2 that the state didn't put the money up to get the munis into the  
3 ISO.

4 And in the Assembly, that money was removed, \$300  
5 million that would have closed the negotiating gap between the  
6 municipals and the ISO, that would have made the municipals an  
7 in-market participant.

8 What percentage of the total amount of electrons  
9 were at stake here that ended up out-of-market during this  
10 summer rather than in-market? If we had had those municipal  
11 electrons in-market, what percentage of the state's market is  
12 that?

13 DR. WOLAK: I don't know the exact number.

14 SENATOR PEACE: Would it be a number approaching  
15 FERC's notion of what the exercise of the market power might be  
16 comparable to?

17 DR. WOLAK: There's certainly a lot of electrons

18 that were purchased --

19 SENATOR PEACE: Well in excess of 20 percent;  
20 isn't it?

21 DR. WOLAK: There is a significant amount.

22 CHAIRMAN DUNN: Professor, let's go to that fall,  
23 September of 2000. Now, we've gone through the summer that  
24 you've identified as a problem area. You issued a report in  
25 September of 2000.

26 Again, what prompted the report? What did you do  
27 leading up to issuing the report? And a summary of the report.

28 DR. WOLAK: The report was essentially an

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1 analysis of the performance of the market during the summer.  
2 You know, what happened; what caused the problem; and how might  
3 you think of fixing it. And that was basically what the report  
4 did.

5 It updated, once again, the market performance  
6 measures that we'd come up with. And it did them through  
7 essentially the May and June 2000, which is when things sort of  
8 went a bit haywire. And in particular, the sorts of measures  
9 that we found were roughly -- average prices, if you like, in  
10 June of 2000, were more than 180 percent above the competitive  
11 benchmark price, which is off the charts relative to anything  
12 that we'd ever seen before.

13 And then, the other part of the report was just  
14 to discuss how might you fix this, or what are some of the  
15 problems that contributed to this.

16 CHAIRMAN DUNN: What were some of the problems  
17 that you identified?

18 DR. WOLAK: Several of them were sort of things  
19 that at least I would think that were kind of previous things  
20 that were noted in the March report of market rule changes that

21 had been implemented that would have some perverse incentives,  
22 and they sort of came to fruition.

23 In particular, one of the big ones was the  
24 so-called replacement reserve penalty, but we may be getting a  
25 bit too far afield in terms of the technical side. But a lot of  
26 the stuff were things that had been previously identified and  
27 warned against, that kind of went the way that you'd expect in  
28 the sense of costing California a lot of money.

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1 CHAIRMAN DUNN: Let's zero-in specifically on the  
2 market power issue, which, as you've noted in each of your  
3 reports, you're watching, obviously.

4 Give us kind of a summary. It's now fall of  
5 2000, September of 2000. How would you summarize your view of  
6 the exercise of market power at that point in time?

7 DR. WOLAK: I guess the way that I would have  
8 characterized it is that the summer of 1998 was, well, there's  
9 growing pains; and we can expect that everybody's sort of  
10 sorting things out, so we could have explained that by that sort  
11 of logic.

12 Then the good news was, then '99 comes, and it  
13 looks like, well, market power, the extent the market power  
14 seems to be coming down, but we're not taking the steps  
15 necessary to make sure that it never comes back.

16 And then 2000 came, and it sort of -- now,  
17 effectively, it's come, in the sense that we are in a position  
18 where it's very easy, because of the supply-demand balance in  
19 California, and it's not the fact that California isn't  
20 supplying in particular, as is well known. The in-state  
21 generating units were used much more intensively than they were  
22 in either '99 or '98. And moreover, the in-state hydro, you got  
23 pretty much the same amount of energy out of the in-state hydro

24 that you did in 1999. So, it really was the fact that the  
25 imports disappeared. And more importantly, disappeared from the  
26 desert southwest as well as significantly reduced from the  
27 Pacific northwest. And that was really -- the source of the  
28 problem being that we're very reliant in the summer on imports.

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1 CHAIRMAN DUNN: Anybody have questions? Senator  
2 Johannessen.

3 SENATOR JOHANNESSEN: How did the natural gas  
4 market look at that particular time?

5 DR. WOLAK: The natural gas prices were certainly  
6 higher. I mean, that was -- but they'd sort of been, if you  
7 like, kind of trending up sort of through the winter of 2000. I  
8 mean, they were sort of slowly heading up. But, you know, it  
9 wasn't like at that time, the price of natural gas was what it  
10 is now, by any stretch. It was probably in the four to five  
11 dollar range at that time.

12 SENATOR JOHANNESSEN: Thank you.

13 CHAIRMAN DUNN: Other questions from committee  
14 members?

15 I want to take you to the end. We've got a  
16 series more to go, and I want you to walk through them, if you  
17 would, Professor.

18 In December of 2000, an additional report was  
19 issued, February 6, 2001, and then March 22nd, 2001. Walk us  
20 through those on what your continued observations were of the  
21 market by those reports.

22 DR. WOLAK: The one that was filed in December  
23 was filed in response to the FERC order to essentially "remedy",  
24 and I put "remedy" in quotes, the California problem for the  
25 reason that the report that we prepared, as well as the report  
26 that was prepared by the PX Market Monitoring Committee, said

27 essentially, all this will do is essentially drive the PX out of  
28 business. It will -- what you're doing with your soft cap is<sub>7</sub>

1 effectively imposing no price cap.

2 CHAIRMAN DUNN: Let me stop you.

3 Explain for us soft cap.

4 DR. WOLAK: What the soft cap is, if I am a  
5 generator, and I'm able to cost-justify my bid into the market,  
6 then effectively, if my generation is needed to meet demand,  
7 then my bid will be paid as bid. So, for example, if I can  
8 cost-justify to you that my costs are \$400, and you need my  
9 generation to serve the market, then I will receive \$400,  
10 despite the fact that the, quote, "price cap" is 150.

11 CHAIRMAN DUNN: So basically, soft cap means I  
12 can blow through it as long as I can convince whomever, in this  
13 case FERC, that I had good justification for doing so.

14 DR. WOLAK: Right and good justification just  
15 simply means -- it's unclear what it means.

16 SENATOR ESCUTIA: No criteria?

17 DR. WOLAK: They said that you would have to cost  
18 justify, but how you would cost justify?

19 In particular, one of the things that's  
20 particularly important here is that almost all these firms have  
21 affiliates. And one of the things that you can very easily do  
22 with an affiliate is, make your production costs, or your cost  
23 of acquiring anything to be virtually any cost you'd like it to  
24 be by doing affiliate deals.

25 So, they really need to be very clear about,  
26 look, it's the actual cost that you, Firm A, with all your  
27 affiliates that you acquired this at, could be one way to do it.  
28 Or, it could be some other way, but they didn't really specify<sub>7</sub>

1 what cost meant and how they would verify that.

2 CHAIRMAN DUNN: Senator Johannessen.

3 SENATOR JOHANNESSEN: So, in essence --

4 DR. WOLAK: Which meant, that's how it becomes  
5 very easy to have essentially a soft cap be no cap, because if  
6 you don't tell me how you're going to verify cost, then it's not  
7 hard to get costs to be.

8 SENATOR JOHANNESSEN: So, what you are saying, if  
9 you have an affiliate, a sister company, if you will, you can  
10 use that avenue in order to raise the cap?

11 DR. WOLAK: Yes.

12 SENATOR JOHANNESSEN: So, in essence you can  
13 control -- there are known controls.

14 DR. WOLAK: Right.

15 SENATOR JOHANNESSEN: Because you have the power  
16 to do that.

17 DR. WOLAK: Yes.

18 SENATOR JOHANNESSEN: Would you think that it  
19 could be a possibility that a phone call would be placed, saying  
20 what they would sell for, or any kind of collusion in that area?  
21 Does it have the possibility of collusion under circumstances  
22 like that?

23 CHAIRMAN DUNN: We're going to get to that in  
24 just a minute, Senator.

25 DR. WOLAK: Well, I think this is a good example  
26 of what we in economics like to call, public coordination  
27 devices, which is just a fancy way of saying that, you know, you  
28 could think of phases of the moon. Today's your day because

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1 it's this phase; and tomorrow is my day because it's that phase.

2 And one of the things that the soft cap  
3 definitely does is, it tells all generators, look, if you're

4 needed to serve demand, don't bid in your cheap gas. Because if  
5 you bid in your cheap gas, you're essentially -- FERC has said  
6 that if you're needed, bid in your expensive cap.

7 SENATOR PEACE: FERC's cap induced providers to  
8 use their most expensive generators rather than their cheapest  
9 generators.

10 DR. WOLAK: Their most expensive gas. So think  
11 of it as, you've got gas deliverers coming in that is --

12 SENATOR PEACE: Cheaper gas to other --

13 DR. WOLAK: And moreover, to follow on that  
14 logic, is that what I would do is, if I divert my cheap gas to  
15 storage, and I'm buying spot gas, then if you like, there's more  
16 gas that's got to get over the pipeline. So, essentially there  
17 you have, if you like, the sort of artificial scarcity of gas  
18 created by the fact that everybody knows that you should always  
19 burn the expensive gas, because if it's needed to supply  
20 electricity, then essentially buy that expensive gas. And  
21 moreover, if it's your affiliate that's selling you that  
22 expensive gas, great.

23 SENATOR JOHANNESSEN: Thank you.

24 CHAIRMAN DUNN: You talked about the December  
25 report.

26 The reporter needs to change paper.

27 As Evelyn indicated, we're coming pretty close to  
28 the end of Professor Wolak's testimony. We'll probably take a  
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1 five-ten minute break if for no other reason than to give Evelyn  
2 a rest, and then start with Dr. Hildebrandt.

3 Senator Peace.

4 SENATOR PEACE: Two questions.

5 Any reasonable explanation for the experience  
6 over this year, other than the exercise of market power?

7 DR. WOLAK: Certainly natural gas prices were  
8 higher. Certainly there were NOx constraints, but that doesn't  
9 get you all the way there. That doesn't even get you, you know,  
10 most of the way there.

11 SENATOR PEACE: In your opinion, is the exercise  
12 of market power the only reasonable explanation for the  
13 extraordinary prices?

14 DR. WOLAK: Yes, of course.

15 SENATOR PEACE: Finally, was it your impression  
16 during this period of time that you were attempting to deal with  
17 FERC that they were corrupt or just stupid?

18 DR. WOLAK: That's called a Hobson's choice.

19 CHAIRMAN DUNN: You're not really looking for an  
20 answer for this one; are you, Senator? You don't have to answer  
21 that one.

22 DR. WOLAK: It is a puzzle. I think that is the  
23 biggest puzzle. Unfortunately, that's probably the \$8 billion  
24 question for California, is exactly that. It's mysterious, if  
25 you ask me. I think it just makes no sense.

26 CHAIRMAN DUNN: Professor, touch upon the  
27 February and March 2001 reports. Same questions: What prompted  
28 them; what did you do; and what were your conclusions?

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1 DR. WOLAK: The February and March were -- one of  
2 the things that was done in the December 2000 report as to  
3 essentially say, please don't do the soft cap, particularly with  
4 the problems that exist in California. And the problems that  
5 exist in California is an overreliance on the spot market.

6 So, the thing that we suggested in this report  
7 was, one mistake that California made, and I think that it's  
8 fairly widely acknowledged, is we didn't do vesting contracts  
9 when we sold the assets. In other words, when you sell the



10 asset, say a 500 megawatt unit, what you do in every other  
 11 market in the world except for California is, you give the  
 12 entity -- that is the load serving entity, say, the  
 13 investor-owned utility -- say, okay, you have the right to say  
 14 400 megawatts each hour at a regulated price. And then when  
 15 the entity that buys the plant, he knows that he has this  
 16 forward obligation to sell that 400 megawatts 24 hours a day, 7  
 17 days a week, for this price that was determined by the regulator  
 18 before the plant was sold.

19 What does that do? That prevents the problem  
 20 that we currently have right now, where essentially you're  
 21 setting a fixed retail rate and having a volatile wholesale  
 22 price that you have to buy out of. But instead, you've got  
 23 price certainty on the wholesale side for a given period of time  
 24 that you can then credibly set a fixed retail rate on top of.

25 So, what was advocated in this December filing  
 26 was to say, okay, we didn't do vesting contracts, so let's do  
 27 them now. And effectively and essentially it just requires  
 28 FERC, you must regulate. And what you must do is, don't get rid

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1 of the spot market. We need the spot market because of the fact  
 2 that demand and supply conditions are tight, and we want to send  
 3 the signals for demand to cut back and supply to come into  
 4 California in the summer months, but don't make us pay roughly  
 5 the spot price for 75 percent of what we're buying, with the  
 6 other percent being roughly the investor-owned utilities'  
 7 capacity that is a physical hedge on their sales.

8 And so, that was basically the idea, is to say,  
 9 FERC, we know you want to keep markets in place. Solve the  
 10 market power problem by essentially shrinking the size of the  
 11 spot market, and then let that smaller spot market work. And  
 12 what that would effectively do is put California on the same

13 playing field with every other market in the country, where  
14 essentially they have these sorts of contracts in place.

15 And that was proposed in a methodology outline to  
16 help them to compute what that price should be that they should  
17 set for the forward contract, what they should offer as the  
18 outside option to generators that refuse to sign the forward  
19 contract. And outside option was simply, you return to  
20 cost-of-service based rates, because this is a market that is  
21 plagued by the exercise of market power, and generators have the  
22 ability to exercise market power. So, unless you agree to this,  
23 it's back to cost-of-service for you.

24 That was essentially what was done in the  
25 February report, to sort of emphasize that the soft cap didn't  
26 work; see what's happening.

27 In fact, if anything, I would say that had FERC  
28 not intervened, we would be in a much, much, much better

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1 position than we are right now. I mean, the soft cap is when,  
2 if you like, the wheels fell off the car. Because what it did  
3 is, it effectively eliminated the price gap, and, you know, the  
4 sky was the limit.

5 SENATOR PEACE: Can we go back? You were in that  
6 position because in the original filings before the FERC,  
7 December of 1995, there is no requirement of a sell-back for the  
8 disposed generation.

9 Were you a participant in the workshops and the  
10 various meetings, Harborview and what not, back then?

11 DR. WOLAK: Marginal. I mean --

12 SENATOR PEACE: Do you recall why it is those  
13 filings, why that was not required? And who was responsible for  
14 the fact that there was not a requirement for it?

15 DR. WOLAK: No, no.

16                   SENATOR PEACE: Are you familiar with the fact  
17 that the Legislature, when it inherited this work product in  
18 '96, a year after the filings were made, attempted to get the  
19 PUC to request that change? Do you recall that?

20                   DR. WOLAK: No, sorry.

21                   SENATOR PEACE: And do you know why that change  
22 was not allowed for?

23                   DR. WOLAK: No, sorry.

24                   SENATOR PEACE: Because FERC wouldn't allow it.  
25 And do you know what their logic and their  
26 reasoning was?

27                   DR. WOLAK: No.

28                   SENATOR PEACE: They said that if we allowed for  
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1 those contracts to be existing in California, which is a net  
2 purchasing state, it would give -- it would simply return market  
3 power to the utilities, because the ownership of a long-term  
4 contract by the owner of a transmission system is the same thing  
5 as owning the power plant itself. So, they argued that to have  
6 long-term contracts would defeat the effort to disaggregate the  
7 ownership of transmission from the ownership of generation.

8                   It's rather logical, if you think about it. If  
9 you recall, their theory about market power was, it could only  
10 be exercised if you simultaneously owned generation and  
11 transmission.

12                   So, in a letter from then-Chairwoman Betsy Moler  
13 to then-Governor Pete Wilson there's an exchange. And  
14 Mr. Wilson -- and it was this exact issue that precipitated the  
15 letter -- Mr. Wilson writes back to Chairwoman Moler and  
16 promises her that there will be no material changes in the  
17 filing, and that he will not sign any legislation that changes  
18 the filing already at FERC. And it was that precise issue that

19 precipitated that letter.

20 DR. WOLAK: I think you mention a very important  
21 point about FERC, which is unfortunate, is that they're not very  
22 interested in learning from other countries for the simple  
23 reason that these sorts of vesting contracts are common to  
24 virtually every country in the world.

25 SENATOR PEACE: But they've perpetuated this  
26 fiction, that California invented the notion of not having these  
27 long-term contracts. It was FERC that imposed an environment,  
28 no doubt encouraged by their generator friends, to set this

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1 circumstance up.

2 Which is why, as we go, I want to try and keep  
3 the history together. The reason why I jump in is to put these  
4 collateral pieces of information as things were developing in  
5 parallel and different universes.

6 And what you see is a pattern of behavior, not  
7 only inside corporate boardrooms, in which they were  
8 legitimately pursuing, as you put it, their fiduciary  
9 responsibility to maximize profit, but they also pursued their  
10 positions where their agents had fiduciary responsibilities to  
11 the public in influencing policies developed at the ISO,  
12 policies developed at the PX, and policies at FERC, where you  
13 have a situation even today where you have this swing with a  
14 FERC board member's father, one of the most influential  
15 consultants to the independent energy industry in the world. He  
16 seems to be wonderfully silent throughout this entire period and  
17 looking for direction from others.

18 That's why I asked you the question about it. I  
19 have great deal of respect for the intelligence of the folks at  
20 FERC, and that's why I asked you the prior question.

21 CHAIRMAN DUNN: Senator Johannessen.

22 SENATOR JOHANNESSEN: Thank you, Mr. Chairman.

23 We are talking, and one of the problems, of  
24 course, was the question of generating capacity for the  
25 utilities.

26 Who purchased these generating facilities that  
27 were divested? Who purchased these?

28 DR. WOLAK: The generators: Duke; Dynegy;

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1 Reliant, which used to be Houston Industries; Mirant, which used  
2 to be Southern; and A. S. Williams were sort of the major  
3 purchasers.

4 SENATOR JOHANNESSEN: Are they same ones now that  
5 are selling back to California?

6 DR. WOLAK: Yes.

7 SENATOR JOHANNESSEN: Thank you.

8 One more thing. Are there any connections  
9 between the sale of these facilities and the buyers? The  
10 sellers and the buyers, any connections between the two?

11 DR. WOLAK: Not that I'm aware of, no, in the  
12 sense of -- no, I don't think there's any affiliate  
13 relationships. I suspect FERC would at least monitor for that.

14 SENATOR JOHANNESSEN: That doesn't give me a big,  
15 fuzzy feeling.

16 CHAIRMAN DUNN: Professor, I think we're nearing  
17 the end on your reports.

18 Any further comments on either the February or  
19 March reports?

20 DR. WOLAK: No, just simply --

21 SENATOR JOHANNESSEN: Just to clarify, in the  
22 selling of the electrons versus facility themselves, two  
23 separate things here. So, the generating facilities and those  
24 that they sell to, the electrons to, those that receive that

25 power, and then in turn resells it, is that a relationship?

26 DR. WOLAK: Well, I mean, some of the investor-  
27 owned utilities still own generation.

28 But what's very important here, I think, is to  
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1 remember your net position. In other words, if I own -- my  
2 demand is at 10,000, and I only own 5,000, I'm a demander.

3 SENATOR PEACE: I think the point the Senator's  
4 trying to make is that a company could have a generating company  
5 and sell to their trading affiliate?

6 DR. WOLAK: Oh, yes; oh, yes. That's standard.

7 SENATOR PEACE: For example, Duke sells to Duke  
8 Trading.

9 DR. WOLAK: Oh, yes.

10 SENATOR PEACE: Then they go to the newspaper and  
11 say, we didn't make any money.

12 DR. WOLAK: Oh, yes. That gets back to the point  
13 that we talked about affiliates.

14 CHAIRMAN DUNN: One speaker at a time, please.

15 SENATOR PEACE: They say, we sold our output, and  
16 we just, you know, gosh, we missed all this big run up. And, of  
17 course, they sold it to their own affiliate.

18 DR. WOLAK: Well, it's moreover the issue of also  
19 forward contracting, is that, you know, despite the fact that  
20 forward contracts may have already been sold, they were sold to  
21 their affiliate, or they may be sold to another generating firm  
22 or to a power marketer, but the forward contract wasn't sold to  
23 load. And, you know, load is eventually going to buy the  
24 product, and so it's still on the spot market.

25 In other words, to say that it's contracted out  
26 is sort of double-talk because it's not sold to a load. And if  
27 it's not sold to a load-serving entity, you haven't essentially

28 sold it to someone that's going to consume it.

8

1 CHAIRMAN DUNN: Again, dragging you into lay  
2 terms, Professor. The point that you were just driving at is,  
3 when an entity says, sorry, that output is under a long-term  
4 contract, the inquiry shouldn't end there.

5 DR. WOLAK: No, it should be, and what final  
6 consumer or agent of a final consumer did you sell it to?

7 CHAIRMAN DUNN: Has it been pledged to a final  
8 consumer?

9 DR. WOLAK: Yes.

10 CHAIRMAN DUNN: And the fact is, there's a lot of  
11 long-term contracts in which there is no final consumer pledged  
12 to as of yet?

13 DR. WOLAK: Well, the easiest way to see that is  
14 to ask the investor-owned utilities how many forward contracts  
15 do you have for delivery this summer, and that tells you the  
16 answer, since they are major servers of loads in California.

17 CHAIRMAN DUNN: Understood, understood. Okay.  
18 Again, any further comments on the March 22nd  
19 report?

20 DR. WOLAK: I guess just the final one was simply  
21 a plea to FERC, more than anything, to simply say that this  
22 is -- effectively was a comment on their -- what they called,  
23 in another interesting sort of use of words, is a market  
24 mitigation plan. On purpose, I think, it omitted the words  
25 market power mitigation plan, but at least in the title of my  
26 filing, it was in there, because that's the whole purpose.

27 And I think it's sort of symbolic of FERC's  
28 unwillingness to recognize a fundamental identity of market

8

1 power mitigation. And that was sort of a major theme that I

2     tried to make in this filing, is to say, necessarily market  
3     power mitigation, I think even FERC agrees with this, means that  
4     consumers will be paying less because they are not subject to  
5     high prices due to market power.

6                     But then the unfortunate problem is that, at  
7     least, it seems, from FERC's perspective, is that market power  
8     mitigation, because consumers are paying less, means that  
9     producers must be receiving less. Because, in order for  
10    consumers to pay less, there's less money for producers to  
11    receive.

12                    And that's the step in the process that, at least  
13    in the staff's report, they expressed tremendous sort of  
14    reluctance in commenting on the proposal that the Market  
15    Surveillance Committee had made in December of 2000. They said,  
16    we like the idea of mandatory forward contracts, but we don't  
17    like the idea of setting the price. That would mean regulatory  
18    intervention, and not letting the market work.

19                    But the whole point is, that if you're going to  
20    mitigate market power, you necessarily must, by force, take away  
21    the ability of firms to exercise that market power by saying, we  
22    will commit you into the forward market to supply at this  
23    price.

24                    You know, to ask for voluntarily signing of  
25    forward contracts implies that the generators are not very  
26    intelligent, because if a generator knows he can sell for \$300  
27    for the next two years in the spot market, his forward contract  
28    price for the next year is at least \$300. And I think that's

8

1     something that we at least tried to make very clear to FERC,  
2     that look, it really requires you to step up and regulate, or  
3     else the hemorrhaging will continue.

4                    CHAIRMAN DUNN: I want to do some quick summary



5 questions before we take a break, and if we can indulge your  
6 patience to stay a little bit longer, and hopefully Professor  
7 Hildebrandt is okay.

8 DR. WOLAK: I'm sure he likes it that I'm up here  
9 longer.

10 CHAIRMAN DUNN: He seems to have been enjoying it  
11 back there, to be honest with you, Professor.

12 Okay, quick summary questions. What's the  
13 earliest time period that, in your opinion, you began to see  
14 evidence of the exercise of market power in California?

15 DR. WOLAK: Effectively since as early as July of  
16 '98. I mean, you could certainly see it, I mean, in the  
17 calculations that we have done.

18 CHAIRMAN DUNN: Let me pick on, as you and others  
19 have referred to them as kind of the Big Five, the generators:  
20 Duke, Dynegy, Williams, Reliance, and Southern.

21 In your opinion, at the time that they applied to  
22 the FERC for market-based rates, was there evidence of market  
23 power in the hands of those five?

24 DR. WOLAK: Well, certainly -- remember, they  
25 applied prospectively, so there was no -- you couldn't say -- I  
26 mean, it would have to be prospective evidence.

27 And I guess in that regard, I'd sort of refer to  
28 studies that were done by colleagues of mine at the UC Energy

1 Institute that essentially looked at this issue, and in a  
2 prospective manner, and did a sort of simulation model of  
3 strategic behavior by generators.

4 And one of the things they found is, gee, during  
5 these summer months, sky's the limit on the price. Those prices  
6 go very, very high, so from a prospective sort of viewpoint,  
7 doing their best with the available data that they had, it was

8 one of the things we sort of patted ourselves on the back about,  
9 was gee, looks real similar to what we're seeing in the summer  
10 of 1998 to what we actually saw in the simulations that we did  
11 with the models that we worked on just before the market had  
12 actually started.

13 So, there was plenty of, if you like, that sort  
14 of evidence to say, careful, you know. To the extent that  
15 everybody's on the spot market, there's tremendous incentives  
16 for them to do these sorts of things because they're earning  
17 that higher price for every unit they sell.

18 And it goes back again to, if I bid higher, I  
19 earn that price on every unit I sell. Whereas, if there's a  
20 forward contract, I only earn that price on what I sell in  
21 excess of my forward contract position. And therefore, if you  
22 like, the benefit from trying to raise the price is much less,  
23 and hence -- and the cost is, I lose sales. So, benefit cost  
24 says I have less incentive to do that. But when I'm on the spot  
25 market to that extent, tremendous incentives.

26 And that's sort of what these kind of prospective  
27 modeling efforts showed.

28 CHAIRMAN DUNN: Here we are in April of 2001. In  
9

1 your opinion, based upon your definition of market power, is  
2 there evidence now of the exercise of market power in the  
3 wholesale electricity market?

4 DR. WOLAK: Certainly, yes.

5 CHAIRMAN DUNN: By whom?

6 DR. WOLAK: As I say, I mean, by basically almost  
7 all of the market participants.

8 I mean, I would refer to the analysis of -- that  
9 the Department of Market Analysis performed. I mean, I've done  
10 similar sorts of analyses that I haven't actually published for

11 the simple reason that because of a confidentiality agreement,  
12 I'm not allowed to disclose the specific actions of specific  
13 generators.

14 But it's a nice hobby for someone like myself to  
15 look at the bids, and to see that, essentially, if you look at  
16 the real-time market, which is essentially a market where there  
17 is no opportunity cost. In other words, once the real-time  
18 market comes, there's no other place for a generator in  
19 California to sell. So, you'd expect that if he is a price  
20 taker, he faces no other opportunity costs besides his  
21 production costs. So therefore, you'd expect that if he is a  
22 price taker, what he would do -- and didn't possess market  
23 power -- he would simply bid his marginal cost into that market.

24 But to the extent that he sees that he has an  
25 ability to influence the price, what he would do is bid  
26 substantially in excess of that to the extent that, you know,  
27 cost benefit, once again, of, I raise the price versus I sell  
28 less.

9

1 And there certainly is evidence that that's  
2 occurring.

3 CHAIRMAN DUNN: As Senator Peace had indicated  
4 before, there are reapplications made to continue under the  
5 market-based rates via FERC that are up in May, if I recall  
6 correctly.

7 DR. WOLAK: That's my understanding, yes.

8 CHAIRMAN DUNN: Do you know if applications have  
9 actually been filed by, for example, the five generators we've  
10 discussed to continue under market-based rates?

11 DR. WOLAK: Yes, I've seen --

12 CHAIRMAN DUNN: Have you read them?

13 DR. WOLAK: Yes, I've read the one for Williams.

14 CHAIRMAN DUNN: Is there any difference in their  
15 argument as to why they claim they do not have market power  
16 from when they claim they did not have it a few years a back?

17 DR. WOLAK: They seem to claim there's more  
18 capacity in California now than there was before.

19 CHAIRMAN DUNN: What do you mean by that?

20 DR. WOLAK: As I recall, the original filing said  
21 the amount of uncommitted capacity to California was on the  
22 order of 72. Now the number is in excess of 80,000.

23 CHAIRMAN DUNN: In other words, if you're  
24 recalling correctly, whomever made that application is claiming  
25 there's a capacity of 82,000 megawatts in California?

26 DR. WOLAK: That is in the, quote, "relevant"  
27 market as far as FERC's hub-and-spoke analysis would say to  
28 serve California.

9

1 CHAIRMAN DUNN: Okay, and we won't repeat your  
2 criticisms of that hub-and-spoke analysis that we did at the  
3 outset.

4 Has anybody filed a challenge to any of those  
5 reapplications as of yet, to your knowledge?

6 DR. WOLAK: Yes. It's my understanding that the  
7 ISO has filed a challenge to their application.

8 CHAIRMAN DUNN: To all of them, to one of them?

9 DR. WOLAK: Thus far, I think they've just filed  
10 to A.S., but I think Eric could say -- would know better than I  
11 on that.

12 CHAIRMAN DUNN: And basically the argument is,  
13 no, there is market power; therefore, you should not allow  
14 continuation of market-based rates for that player?

15 DR. WOLAK: Yes. I would certainly advocate that  
16 unless something on the order of the remedy that I've been

17 suggesting is implemented, it seems like to give market-based  
18 rates makes no sense whatsoever, given the evidence of the past  
19 six months.

20 CHAIRMAN DUNN: What I'd like to do, Professor,  
21 do you have the time to hang around if we take a five-minute  
22 break here, and then come back for about 20 minutes or so? Then  
23 we'll get to Professor Hildebrandt.

24 Because what I want to do is seize upon one of  
25 the comments that Senator Morrow made before, the question about  
26 whether market power by itself is evidence of -- more to the  
27 anti-trust end of the competitive behavior, or anti-competitive  
28 behavior, and what, perhaps, we ought to look at from our

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1 investigation committee to determine whether we're nearer that  
2 end of the spectrum, or we're near just behavior, acceptable  
3 behavior, on a free market. That I'd like inform explore, with  
4 your indulgence.

5 Evelyn, for you a break. We're going to take  
6 about five minutes, everybody.

7 [Thereupon the Committee.  
8 took a brief recess.]

9 CHAIRMAN DUNN: Professor, are you ready? I  
10 know I keep promising you that we're going to come near the end,  
11 but I think we're actually getting there.

12 Let's return, and as you're probably aware,  
13 Professor, you are still under oath, and we'll move forward.

14 DR. WOLAK: Yes.

15 CHAIRMAN DUNN: I wants to pursue certain  
16 questions that really are designed, Professor, for purposes of  
17 educating us as we move forward from this point in time.

18 You've been pretty clear in your testimony thus  
19 far about the opinion of the Market Surveillance Committee, and

20 the existence of market power.

21 And Senator Morrow posed an excellent question.  
22 That being, okay, but is the market power that's been evidenced  
23 here in California, does that really push towards the end of the  
24 spectrum that indicates potentially anti-trust or collusive  
25 behavior, as it oftentimes is labeled.

26 You're probably not aware, and a lot of folks in  
27 this building are not aware, that I've spent my legal career as  
28 a product liability lawyer primarily, so knew little about what  
9

1 really constitutes collusive/anti-trust behavior.

2 I've spent a lot of time reading a lot of  
3 anti-trust textbooks, including certain books you've used in  
4 your class before as well, to try to come to some understanding  
5 about what we ought to be looking at from this point forward as  
6 an investigation committee to determine, in fact, whether there  
7 was any behavior that really pushes us towards that anti-trust  
8 level or end of the spectrum.

9 So, let me ask you the question to help guide us  
10 as we move forward, professor. One of the our goals is to look  
11 into whether in fact there was any coordinated behavior between  
12 the market players on the wholesale electricity market here in  
13 California.

14 What things would you recommend that we look at  
15 to determine whether, in fact, such coordinated behavior  
16 occurred?

17 DR. WOLAK: Well, there's many things.

18 I guess the first is that one of the things  
19 that's certainly true, is going to help you, is knowing  
20 affiliate transactions. Effectively looking at one of the  
21 entities in isolation, it's virtually impossible to know exactly  
22 what their incentives are.

23                   You need to essentially know what is going on in  
24 the firm as a whole, because, after all, it is the firm as a  
25 whole that wants to maximize its profits, serve its  
26 shareholders, which could mean that this affiliate could, in  
27 fact, want to do something quite different.

28                   So, the first is to get a complete picture of <sup>9</sup>

1     what is going on in the firm, the complete entity serving the  
2 California market.

3                   The second is, I think, is places where the  
4 generators or the market participants, if you like, get  
5 together. And I think Senator Peace referred to one place that  
6 I think is particularly important, and is not fully appreciated.  
7 And that is the regulatory forums. I can't count how many times  
8 in proceedings at FERC where I would hear generators discussing,  
9 well, here's how we bid. We bid our costs in like this. Or, we  
10 think about this in this way.

11                  And you would think, well, in any other market,  
12 that would be -- at least raise you a little bit of concern in  
13 discussing things like how you bid. Now true, it's how you bid  
14 in abstract, like do you bid your start-up costs in or do you  
15 not bid your start-up costs in.

16                  But, you know, essentially the modes of where  
17 information can be exchanged, because -- and it isn't  
18 essentially information in the sense of, here, you price this  
19 way and I'll price that way. But it's more information  
20 exchanged in the sense of giving me strategic information that  
21 is useful to know how you might behave in this sort of  
22 circumstance, which will then allow me to behave such a way that  
23 raises the price.

24                  CHAIRMAN DUNN: Professor, let me interrupt for a  
25 second.

26                   Let's put a framework around that. As I read the  
27 various textbooks in addressing the potential for what's  
28 oftentimes collusive, but we'll use the term coordinated

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1 behavior here, that if in fact that has occurred in a given  
2 market hypothetically, certainly the players on that market have  
3 to have a means of communication.

4                   DR. WOLAK: Yes.

5                   CHAIRMAN DUNN: And that's what you're referring  
6 to.

7                   DR. WOLAK: Yes.

8                   CHAIRMAN DUNN: That what we ought to look at is,  
9 how did the players on the wholesale electricity market,  
10 assuming they did, communicate with each other?

11                  DR. WOLAK: Yes, and I think the important thing  
12 to emphasize, it isn't the explicit communication.

13                  I think an example is perhaps the best way to  
14 illustrate it. In the FCC spectrum auctions, the way that  
15 market participants would bid on the various licenses is in  
16 terms of the large dollar magnitudes.

17                  And one of the things that happened in the FCC  
18 auctions is, one market participant very much wanted say Block  
19 302. And the other market participant wanted Block 304. So,  
20 one time other market participant was bidding over at Block 302,  
21 and the guy said, no, I really want 302, and you're trying to  
22 bid on that. So, what this market participant that wanted Block  
23 302 did is, went over and bid on Block 304. And in the  
24 round-off digits of his bid, put 302 in it. And then the next  
25 time, the other guy did back and put in the round-off digits of  
26 his bid, 304.

27                  So, in some sense, said: You stay away from  
28 304; I'll stay away from 302, and we'll both get them for much



1 cheaper, so don't compete over here.

2 Now, that's my inferences from that, but you sort  
3 of repeatedly see these numbers showing up in the repeated bids,  
4 it causes you to at least say, something strange is going on;  
5 they're trying to communicate.

6 There is where you get into the realm, I think,  
7 closer to the world of this sort of anti-trust violation. And  
8 in fact, this is something that the Justice Department, at  
9 least, investigated.

10 CHAIRMAN DUNN: Again, I want to establish some  
11 framework, because I want to go back to some other potential  
12 means of communication, where there may be allegations of anti-  
13 trust and collusive, coordinated behavior in a given market.

14 I know in a lot of your work that you've done,  
15 and in the teaching that you do, you explore a lot of the cases  
16 involving anti-trust claims; true?

17 DR. WOLAK: Yes.

18 CHAIRMAN DUNN: It's fair to say that, although  
19 it's almost intellectually easy for the anti-trust claim that  
20 has the four market players meeting in the smoke-filled room,  
21 carving up the map and determining prices, that that's almost a  
22 direct evidence type anti-trust case?

23 DR. WOLAK: Yes.

24 CHAIRMAN DUNN: And those cases exist.

25 DR. WOLAK: Yes.

26 CHAIRMAN DUNN: But there are also a big body of  
27 cases that don't involve that kind of direct evidence indicating  
28 coordinated behavior at all.

1 DR. WOLAK: Yes.

2 CHAIRMAN DUNN: And in fact, the entire case is

3 built on indirect evidence of coordinated behavior.

4 DR. WOLAK: Yes.

5 CHAIRMAN DUNN: That's really the area we're in  
6 that we're talking about right now.

7 DR. WOLAK: Yes. I mean, that would sort of, you  
8 would think, the first step, unless someone is willing to come  
9 forward and say something different.

10 CHAIRMAN DUNN: I just want to make sure that we  
11 have, all of us collectively that are watching this process,  
12 that for an anti-trust case to succeed, it doesn't need direct  
13 evidence of the meeting in the smoke-filled room, carving up the  
14 market.

15 DR. WOLAK: Yes, that's correct.

16 CHAIRMAN DUNN: In fact, many cases don't have  
17 that at all.

18 DR. WOLAK: Yes.

19 CHAIRMAN DUNN: It is built entirely on indirect  
20 evidence of certain behavior in that market.

21 DR. WOLAK: Yes. I think the distinction is, in  
22 anti-trust it's preponderance of evidence, versus a sort of  
23 murder trial, it's beyond a reasonable doubt. So, you can kind  
24 of think of it as 51-49.

25 CHAIRMAN DUNN: The indirect evidence may not  
26 satisfy a criminal standard, but the indirect evidence may very  
27 well satisfy a civil preponderance of the evidence standard?

28 DR. WOLAK: Correct, yes.

9

1 CHAIRMAN DUNN: Let's go back to the means of  
2 communication. You're saying, one of the things we ought to  
3 look at is, how did the subjects of our investigation, the  
4 players on the wholesale electricity market, communicate with  
5 each other?

6                   You said one of them was, in reference to Senator  
7 Peace's earlier comments, what information they may very well  
8 exchange via their appearances before regulatory bodies?

9                   DR. WOLAK: Yes, as well as just simple  
10 statements in regulatory hearings.

11                  Another thing that comes up is that in a world in  
12 which everyone is cost-of-service regulated, you telling me your  
13 cost, or characteristics of your plant, or when you're going to  
14 go down for a forced outage, that's not really a problem because  
15 of the fact that you're cost-of-service regulated. I'm going to  
16 set your price based on your costs.

17                  But in a market environment, to the extent that  
18 we share information about what's your E rate, what are you  
19 doing at the moment in terms of repairing your plant, what are  
20 your plans for taking it down, that has a reliability reason to  
21 share information for that.

22                  But there's the other side of the coin, which is,  
23 it certainly helps me to know when you'll be down to know when I  
24 should be up, to be able, since we bid higher than I would if  
25 you're up, because I know that you don't have capacity to supply  
26 in if I do decide to bid higher.

27                  CHAIRMAN DUNN: Senator Johannessen.

28                  SENATOR JOHANNESSEN: Thank you.

10

1                   I'd like you to characterize something, what your  
2 feelings are.

3                   In 1999, Dynegy executives went before the  
4 Congressional committee hearing in support of speeding up  
5 deregulation. They wanted to speed up deregulation, they told  
6 the Congressional committee, and I quote, "to ensure maximum  
7 customer savings and low cost power."

8                   Now, the same month, that particular firm made a

9 far different pitch to Wall Street, where they said, now those  
10 diverse electricity prices would fall, the corporate revenues  
11 and profits will climb, will be the key focus of special State  
12 Senate committee charge, and so on.

13 In other words, they told a Congressional  
14 committee that if they would help speed up the deregulation,  
15 that they almost could be assured of lower prices, more  
16 plentiful and lower prices, and at the same month goes to Wall  
17 Street and tell them, you can anticipate a lot more money coming  
18 into our coffers.

19 Do you think they knew something we don't?

20 DR. WOLAK: I would say they just read the Market  
21 Surveillance Committee reports.

22 [Laughter.]

23 SENATOR JOHANNESSEN: Thank you.

24 DR. WOLAK: It's a good time to have generation  
25 in California.

26 SENATOR PEACE: When they read your Market  
27 Surveillance Committee report, did any generator representative  
28 on the ISO board ever, on any occasion, vote in favor of any  
10

1 actions that would have been designed to mitigate the exercise  
2 of market power?

3 DR. WOLAK: Not that I'm aware of, but I don't  
4 know every vote.

5 SENATOR PEACE: To the best of your knowledge,  
6 there was never an occasion in which even a single generator  
7 representative -- in fact, do you have recall an occasion in  
8 which the generator representatives even voted differently?

9 DR. WOLAK: I don't -- I don't -- I'm not aware  
10 of many of the votes.

11 But I guess, I mean, once again, I think the

12 important thing to bear in mind with the ISO board is that  
13 generators only, I think, had three votes. And the ISO board  
14 was composed of many, many, more market participants. So, they  
15 needed somehow to get others to go along. So the more --

16 SENATOR PEACE: -- over a period of three years,  
17 there was never a circumstance where one out of the three  
18 happened to maybe see something a little differently.

19 DR. WOLAK: Well, the issues that usually came up  
20 on the board were, this hurts generators; this hurts loads. And  
21 so, you would tend to get things sort of bifurcating along those  
22 lines.

23 SENATOR PEACE: Along the Chairman's questions  
24 with respect to indirect evidence, what role in building a case  
25 like this, and how do you handle -- you know, these guys all  
26 have trade associations, so they obviously coordinate a lot of  
27 public relations policies, and what not, through trade  
28 associations. And they obviously have to share information in  
10

1 order to represent their position.

2 How is the line drawn between what's appropriate  
3 in terms of sharing information as a trade association, versus,  
4 at the point in which you actually have a coordinated effort?

5 Because again, you have situation here where  
6 public policy's in part being made by people with dual fiduciary  
7 responsibilities. One is the fiduciary responsibility to the  
8 stockholder with this hat on; another fiduciary responsibility,  
9 after having taken an oath, as an ISO board or a PX board  
10 member.

11 And then, reporting to a trade association in  
12 which documents are circulated, even as early as February,  
13 anticipating run ups in prices, and discussing strategies about  
14 how they will defend themselves in the market, and how they will

15 attack others who disagree with their positions.

16 How does all of this behavior, from the  
17 standpoint of public documents with PR representatives, and  
18 media types, and that sort of thing, hiring folks to write Op.  
19 Ed. pieces, put into the newspaper without revealing what the  
20 true source of payment is, advocating a particular position,  
21 aggressively attacking those who try to keep caps in places.

22 Would all of that be collateral evidence to point  
23 towards this kind of indirect activity that's associated with  
24 collusive or a collective behavior?

25 DR. WOLAK: I mean, I think you could say yes it  
26 is, but I guess my opinion would be it's fairly weak collateral  
27 evidence.

28 But I think you raise a very important point that  
10

1 has, I think, been ignored by the FERC as well. In the  
2 transition from regulation to competition, one of the things  
3 that is certainly told to all firms that, like for example,  
4 Silicon Valley firms, or firms that compete in markets is:  
5 Look, be very careful in your industry associations to  
6 essentially watch out for anti-trust kinds of communication and  
7 potential violations.

8 And I think as a result of the fact that this is  
9 an industry that's transitioning from regulation to competition,  
10 this that something that sort of hasn't come up on the radar  
11 screen and certainly needs to come up from the anti-trust  
12 authorities to acquaint them with that fact.

13 SENATOR PEACE: One of the things, Mr. Chairman,  
14 I'd recommend the committee do is seek subpoenas for all  
15 documents of the Independent Energy Producers Association,  
16 dating back to early '90s, starting with the FERC, and then  
17 moving into the workshops that the PUC held, and then --

18 CHAIRMAN DUNN: Already in process, Senator.  
19 That's one we've already been working on.

20 SENATOR PEACE: You're ahead of me as usual.

21 CHAIRMAN DUNN: Of course, that was the first  
22 notice to the independent energy folks.

23 Professor, I want to just walk through, because  
24 you're educating us on where we've got to look here to see, and  
25 again, not to keep picking on Senator Morrow, but whether the  
26 market power that was identified really moves to that end of the  
27 spectrum, the anti-trust end.

28 We've identified we've got to watch

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1 communications before and in front of regulatory bodies as a  
2 means of exchanging communications. We have to watch trade  
3 associations, as Senator Peace just touched upon.

4 What other areas that we ought to explore to  
5 determine whether there may exist indirect evidence of  
6 communication between the players on the wholesale electricity  
7 market?

8 DR. WOLAK: Well, certainly an area that I think  
9 is important to look at is the role of power marketers, for the  
10 simple reason that you could kind of think of it as, and maybe  
11 this is a bad analogy, is the power marketer as sort of the  
12 bumble bee visiting the flowers. And even though each time they  
13 visited a flower, you know, but you could see sort of traces of  
14 previous flowers that have been visited while the bumble bee  
15 visits the next flower.

16 So, to the extent that information, subtle though  
17 it may be, is associated with the power marketer, the deals that  
18 it makes, and the information that it says about the deals that  
19 it's making to other market participants, that reveals  
20 information to other market participants. So, in that sense, a

21 crucial key to the puzzle is certainly the sorts of things that  
22 power marketers are doing.

23 And to the extent that these sorts of  
24 communications are not explicit, but certainly, you know, things  
25 happen. I mean, go back to the analogy with the FCC auctions.  
26 It's to the extent that, you know, those three digits that were  
27 meaningless in terms of the economics of the bid conveyed a lot  
28 of information about, look, don't bid there or I'll go bid where  
10

1 you want to buy. And, you know, it's very useful, those sorts  
2 of signals.

3 So, it's not explicit, but it nonetheless  
4 communicates the essence of what you want to get across.

5 CHAIRMAN DUNN: Again, in lay terms, we need to  
6 look closely at the marketers because their behavior in the  
7 market may very well make certain signals to other players in  
8 the market.

9 DR. WOLAK: Yes, much more clearly.

10 CHAIRMAN DUNN: Any other means of communication  
11 that we ought to look another to determine if it existed in this  
12 particular market?

13 DR. WOLAK: I guess the big sorts of behavior  
14 that you want to concern yourself with is the -- let's go back  
15 to the competitive model versus the other model.

16 CHAIRMAN DUNN: Means of communication. I'm  
17 going to get to behavior in just a second.

18 DR. WOLAK: Okay. I guess the other sorts, I  
19 can't think of any more, I guess.

20 CHAIRMAN DUNN: I don't want you to come anywhere  
21 near violating the confidentiality agreements that apply to what  
22 you can and can't testify.

23 We as a committee, the committee agrees, the



24 majority, that if we want to go and fight those, we'll do that.

25 But let me ask you a question. Have you seen any  
26 evidence in this particular market, the wholesale electricity  
27 market, of communication between the players?

28 DR. WOLAK: I guess, once again, it's the sort of  
10

1 thing of it certainly is stuff that causes me to puzzle.

2 But in terms of explicit communication, no.

3 I mean, I guess one of the big things that I've  
4 gotten in a lot of trouble for saying is --

5 CHAIRMAN DUNN: And we don't want you to get in  
6 trouble today.

7 DR. WOLAK: No, I hope not legal trouble, but  
8 basically just trouble with people, is drawing the analogy  
9 between a forced outage and a sick day. In particular, that a  
10 generator that declares his plant forced out, effectively, you  
11 don't know if it really is forced out and can't run, or it is  
12 just simply profitable for it to be forced out. Because the  
13 best news that you can give me as a competitor is to say, I'm  
14 forced out today. Because what that is essentially saying is, I  
15 can't bid very aggressively. In other words, I have limited  
16 amounts of capacity that I can discipline your ability to  
17 exercise market power, unilateral market power, of course, and  
18 so it's good news for me if you declare a forced outage today.  
19 And moreover, if three days later, I declare a forced outage for  
20 you, then we sort of, once again, it can in some sense -- we can  
21 somehow learn to get to this solution, even though we haven't  
22 explicitly communicated.

23 One of the things that you certainly would want  
24 to do in these sorts of environments is, you experiment. And  
25 you sort of try to signal to your competitors that look, this is  
26 a smart thing to do; don't do this.



1 looked at the pattern of forced outages, it should look as  
2 something that is random, unexpected and unpredictable.

3 To the extent that it's sort of predictable --  
4 today it's you; tomorrow it's him. Today it's you; tomorrow  
5 it's him -- that starts to raise, I'd say, the specter of  
6 something's going on.

7 SENATOR JOHANNESSEN: But doesn't it lead to the  
8 question of if this is a collusion when you, all of a sudden,  
9 have this kind of a scenario happen?

10 You know, I'm an engineer that went out with a  
11 slide rule, so I have a little bit of understanding but not  
12 enough.

13 When you schedule, when the words, well, we  
14 scheduled the maintenance, we run them too hard, we got to do  
15 fix it, we've got to put technology in.

16 Isn't it strange unless you have an actual  
17 breakdown? I can understand that, somebody put a widget in the  
18 gears. I can understand that.

19 But wouldn't you think that it's unusual in a  
20 heavy demand situation that someone decided that this is the  
21 time to change to new technology or whatever?

22 DR. WOLAK: Right now, we are in the trough of  
23 the annual cycle, so if what you want to be able to do is  
24 produce for this summer, and not bump up against your NOX  
25 constraints, you certainly would want to be installing the  
26 pollution control capability to do that.

27 I guess what I would say is, it's more the  
28 opposite. Where you say that it's perfectly logical that, you  
10

1 know, a forced outage would occur, I mean, the analogy, go back  
2 to the analogy of a sick day. You call to your boss and say,  
3 I'm sick today. Why doesn't he send someone out to essentially

4 examine you? Because he knows that the human body is an  
5 extremely complex piece of equipment, and doctors don't  
6 understand it completely. So, even if the doctor comes to visit  
7 you, you can fake some disease that the doctor has never seen,  
8 and he can't definitively say, he's faking it. It's not a sick  
9 day; he could work.

10 And it's the same, you know, the exact logic  
11 applies to a generating facility. You know, you send an  
12 inspector out to the generating facility to look at. He may be  
13 an engineer. These are 30-year-old facilities. There's lots of  
14 things you can fix in a 30-year-old facility.

15 And moreover, I would prefer to give the  
16 discretion to the plant operator as whether or not the plant  
17 should actually be operated, since it could be extremely  
18 dangerous if you say, I order you to turn that on, and it really  
19 is broken.

20 SENATOR JOHANNESSEN: I agree with that.

21 DR. WOLAK: So, I mean, but once again, this gets  
22 into the role of forward contracting again. How do you solve  
23 that problem? Well, if I've signed up this generator for a  
24 forward contract, if he declares a sick day, he's got to buy it  
25 out of the spot market. And that price is going to be very,  
26 very high.

27 Once again, there's a market solution to this  
28 problem that was not implemented.

11

1 CHAIRMAN DUNN: We'll go Senator Kuehl and then  
2 Senator Morrow. I'm sorry, Senator Bowen.

3 SENATOR BOWEN: I'm taller than she is.

4 CHAIRMAN DUNN: I'm not going anywhere near that  
5 one.

6 SENATOR BOWEN: I'm interested in pursuing this

7 line of questioning about how we might evaluate the outages,  
8 because I certainly am aware that I have more outages, unplanned  
9 outages, than I did ten or twenty years ago.

10 So, no question that aging equipment can account  
11 for more outages.

12 But it seems to me that we have a pretty simple  
13 set of control cases that we could use to do an objective  
14 statistical analysis, because we have generating facilities of  
15 similar age, and similar construction, and operating  
16 constraints, in the same market, in the western United States,  
17 that are different only because they're not located in the  
18 state, and therefore, don't get ordered to run.

19 So, it seems to me that one of the things we  
20 might do is, use the facts that we have about the rate of  
21 outages, for example, in the public power areas in the same  
22 market -- in Arizona, in Nevada, in other places -- under  
23 similar weather conditions, and so forth.

24 DR. WOLAK: You're exactly on the line of what  
25 I'm interested in doing and have been trying to do.

26 What I would like to do is take the same units,  
27 the exact same units that used to be owned by the investor-  
28 owned utilities, take a similar time. For example, 1994 was an

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1 extremely dry year in California. And essentially do the  
2 following analysis. But it would require getting data from the  
3 investor-owned utilities.

4 I have information, and in fact, have computed on  
5 a monthly basis the capacity factor for each generating unit  
6 that's operating in California. With capacity factor being,  
7 take the capacity of the unit, multiply it by the number of  
8 hours in the month. That's, if you like, the maximum potential  
9 you could expect to get out of that plant. And then, take the

10 actual amount that they produced in that month.

11 So, what I would very much like to do is, even if  
12 you have it on a month-by-month basis for 1994, when they were  
13 owned by the former vertically integrated utilities, just to  
14 simply say, look, let's compare on a month-by-month basis,  
15 across plants, to the similar weather conditions. The only  
16 difference is, the plants are six years older, but they're 24  
17 years old versus 30 years old. So, sort of, the amount of aging  
18 that's taken place is probably not that much between the  
19 six-year period. And let's see, if you like, did they push them  
20 as hard, and what sort of production rates did they get.

21 But the rate constraining step to be able to do  
22 that is, at least for me, is to get that information from the  
23 investor-owned utilities. And you'd have a very willing party  
24 to do it if you did get that information.

25 CHAIRMAN DUNN: Let me interrupt, if I can. I  
26 want to add on to what Senator Bowen had just indicated, because  
27 I want to provide a little context. I'm going to go back to the  
28 textbooks.

11

1 We talked about means of communication as one  
2 piece of indirect evidence towards a potential for coordinated  
3 behavior in given market.

4 One of the others that the textbooks indicate we  
5 ought to look at is certain behavioral outcomes that don't seem  
6 to be explained in any way other than coordinated behavior in  
7 that given market.

8 I think Senator Bowen, and Professor, you've  
9 added one of them on the forced outages side of it.

10 One of the things that I've been curious about is  
11 forced outages ought to be, by their nature, random. And we  
12 ought to look, in fact, at each and every one of those who claim

13 forced outages here in California, and compare to determine, do  
14 they really appear to have been randomized.

15 Do you know whether that information is available  
16 to this committee? Or is that covered by some confidentiality  
17 agreement?

18 DR. WOLAK: Well, unfortunately, the good news  
19 is, no, it's not covered by a confidentiality agreement. The  
20 bad news is that up very recently, this was information that the  
21 ISO didn't get sort of on a regular sort of basis because the  
22 generators were not required to name, to specify when they were  
23 forced out, and how much they were forced out.

24 It's only since essentially the beginning of 2001  
25 where there's very reliable information on this.

26 As it was before, it was to the extent that the  
27 ISO operators caught it, they would get it. Because, it's my  
28 understanding, that the generators didn't want to provide that  
11

1 information, claimed it was confidential business information.

2 CHAIRMAN DUNN: But certainly, at least from your  
3 perspective, it's information the generators have, even if the  
4 ISO does not.

5 DR. WOLAK: Yes, that's certainly true.

6 Once again, it's sort of like self-reporting are  
7 you sick.

8 CHAIRMAN DUNN: I understand.

9 DR. WOLAK: You have to be aware of that. So,  
10 it's one of these sort of impossibilities. Yes, it may be  
11 written down in the operator log as it was out that day, but,  
12 you know, it's difficult to verify whether or not that's the  
13 case.

14 CHAIRMAN DUNN: But that, Professor, only goes to  
15 your comparison of '94 to, say, 2000. That doesn't impact what

16 we assume to be, they should just be random outages when we  
17 compare company-to-company.

18 DR. WOLAK: Once again, let me take the more  
19 nefarious sort of view of the world. But if I knew that you  
20 were asking me for this information, I might reshuffle how my  
21 forced outages look.

22 CHAIRMAN DUNN: Are you suggesting these people  
23 would actually do that?

24 DR. WOLAK: No, I'm just saying that, to the  
25 extent that -- I guess as an economist, I take the view that  
26 people do what's in their financial interests.

27 CHAIRMAN DUNN: Understood, understood.  
28 Did Senator Bowen leave? I interrupted.

11

1 Senator Morrow.

2 SENATOR MORROW: Thank you, Mr. Chairman.

3 I think I know the answer to this question, but I  
4 want to ask you just so it's crystal clear.

5 Aside from what you've told the committee thus  
6 far, Professor Wolak, am I hearing you correctly? Basically  
7 you're saying that there's no way to independently verify the  
8 legitimacy of a forced outage?

9 DR. WOLAK: Yes, exactly.

10 SENATOR MORROW: Nothing you can think of, no  
11 evidence that we can go to?

12 DR. WOLAK: No. I mean, you know, true, to the  
13 extent that you can have someone in the plant come forward and  
14 say, we could have run that day, but they told me not to run.

15 SENATOR MORROW: But you're not aware of any  
16 whistle blowers?

17 DR. WOLAK: Yeah, but I mean, you think of it as,  
18 it's something that's unobservable. It's exactly analogous to



19 the sick day. I mean, you know, if I say, look, I'm sick; I  
20 can't work. It's pretty easy to get another -- it's sort of  
21 like the other analogy I draw is, I'm sure you've flown on  
22 airplane flights where you arrive at the gate, and there's five  
23 other people at the gate. And then the attendant comes out and  
24 says, the flight's been cancelled due to mechanical problems.

25 SENATOR MORROW: Not to cut you off, but I just  
26 had a thought conversely.

27 If it was a generator and wanted to verify or  
28 confirm the legitimacy of an outage, would there be any way that  
11

1 I could do that?

2 DR. WOLAK: Think of it as, it's the same thing  
3 as with the sick days. You're the generator owner. You know  
4 whether or not you really think you could run the plant, by the  
5 same token as, you're the sick person, and you know whether or  
6 not you really can go to work today. That's it.

7 But another generator coming in would be  
8 analogous to having a doctor come to examine you. I mean, the  
9 doctor, if you want to prove to that doctor you just can't run,  
10 you can do quite a good job of convincing him you just can't  
11 run. And the same sort of thing goes to convincing another  
12 engineer.

13 Think of it as, that's -- you know, the simple  
14 way to think of it is, it is your private information. And if  
15 it's profitable for you withhold that private information, you  
16 will earn money because of that private information.

17 Once again, how do we solve this problem in other  
18 markets? The simple example in the labor force market would be,  
19 look, it's okay if you take a sick day, just find somebody to  
20 replace you. And that's the analogous solution that I suggested  
21 to FERC in a filing in February.

22                   SENATOR MORROW: I was right. I was afraid that  
23 was going to be your answer. Thank you.

24                   CHAIRMAN DUNN: Before I go on to Senator Kuehl,  
25 I want to follow up.

26                   With respect to trying to determine the  
27 randomization of forced outages, it's not really an issue of was  
28 this forced, was it not.

11

1                   We can certainly determine when a plant was out.  
2 We can compare when the planned outages were for a given time  
3 period, and assume the rest to be forced outages.

4                   That is all the information we need to do a  
5 randomization comparison to determine whether, in fact, the  
6 quote-unquote "forced outages" really appear random when we  
7 compare company-to-company.

8                   DR. WOLAK: Yes, assuming that you get for the  
9 period in which the ISO did not collect the data, and the  
10 generators were not required to report every single day whether  
11 or not they were out or not, assuming that the previous  
12 historical data written down the way it actually occurred, yes,  
13 you could do that, certainly.

14                   CHAIRMAN DUNN: It's an easier process than  
15 trying to go down and compare '94 to '99.

16                   DR. WOLAK: No, actually I think '94 to 2000 is  
17 really the comparison, really the way to go, because then --

18                   CHAIRMAN DUNN: That gives us the problem of the  
19 sick day analogy, which doesn't occur in the randomization  
20 analysis.

21                   DR. WOLAK: Well no, it's answering a different  
22 question.

23                   Think of it as, the question would be, is that --  
24 think of it as the question that you would like to address with

25 the '94 to 2000 comparison is, we push these units as absolutely  
26 hard as we could push them. In other words, they were pushed to  
27 the limit, and if we pushed them harder, they would have been  
28 forced out.

11

1 So, if what you did is you say, let's do pair  
2 wise for each unit annual production for the year. And let's  
3 just do the -- define the variable that says, if '94 production  
4 is bigger than 2000 production, let's give that a one. If not,  
5 let's give that a zero.

6 Then let's add up all of the ones and zeros, and  
7 divide by the total number of plants we've got. And we'd say,  
8 look, if you pushed them as hard as they could be pushed, and  
9 '94 was a year in which they were pushed as hard as hard as they  
10 could be pushed, what would we expect? We would expect that  
11 that frequency would be point five.

12 But to the extent that that frequency, say, is  
13 roughly point seven, point eight, something very large and  
14 closer to one or closer to zero, that gives us very strong  
15 evidence to say, look, the story you're telling about pushing  
16 them very hard doesn't look to be borne out by the data that we  
17 see, because of the fact that roughly 80 percent of the plants  
18 were run harder in 1994 than in 2000. And that is statistically  
19 significantly different from point five, to use sort of the  
20 technical jargon of a statistician.

21 CHAIRMAN DUNN: Let me have one more question,  
22 then turn it over to Senator Kuehl. Then I'll go to the  
23 Assemblywoman, and then Senator Johannessen.

24 If we were able to determine just the raw hours  
25 of forced outage, and compare each company, the total number of  
26 raw hours of outages in a given year, say the year 2000. One  
27 would expect, from a statistical perspective, that those

28 companies that have the generation facilities here in

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1 California, that their raw forced outage hours would not be  
2 necessarily identical to each other.

3 A fair assumption from a statistical perspective?

4 DR. WOLAK: Certainly, yeah. You'd sort of  
5 expect that it's the standard argument of the realizations of  
6 the random variables are always less noisy than the mean.

7 CHAIRMAN DUNN: Exactly.

8 DR. WOLAK: So, if I have a mean of ten, I'd  
9 expect lots of realizations up above and beyond ten.

10 CHAIRMAN DUNN: If everybody's on the mean --

11 DR. WOLAK: Then that's certainly evidence of the  
12 nonrandom problem that we're talking about.

13 CHAIRMAN DUNN: There you go.

14 Senator Kuehl.

15 SENATOR KUEHL: Forgive me, Mr. Chairman, if some  
16 of this was discussed before. I'm amazed the witness is  
17 outlasting his microphone.

18 In addition to the kind of circumstantial  
19 evidence that we've been talking about in terms of comparing  
20 data, did the investigations or the reports show any further  
21 evidence of purposeful withholding? Or are we just making  
22 assumptions based on comparatives?

23 DR. WOLAK: I think it's important to remember  
24 that purposeful withholding in a unilateral sense is not illegal  
25 under U.S. anti-trust law.

26 SENATOR KUEHL: Not illegal, that's right.

27 DR. WOLAK: And moreover, that is what exercising  
28 market power means. It means that essentially I am unwilling to

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1 make available my capacity at essentially operating costs,

2 because I perceive that by the fact of making it available at a  
3 higher price, I stand a likelihood of setting the market claim  
4 price with my bid, and therefore, earning a higher price as a  
5 result of bidding higher.

6 So, the whole idea of unilateral exercise of  
7 market power is just that.

8 SENATOR KUEHL: So, the reference to physical  
9 withholding in the reports is not related to these outages.  
10 Physical withholding is an actual and purposeful exercise of  
11 market power, as opposed to what we expect to see in this  
12 comparative data?

13 DR. WOLAK: It gets back to the point that I'm  
14 saying once again is, if I can't tell the difference between a  
15 forced outage, a true forced outage, or think of it as a sick  
16 day and a real sick day, then effectively one interpretation of  
17 a forced outage could be physical withholding.

18 SENATOR KUEHL: Is there another kind of physical  
19 withholding that was evidenced in addition to outages? It could  
20 be done another way, but was it done another way?

21 Because it seems to me, here's what I guess I  
22 want elucidated, and I don't know if I can be clearer, but I  
23 hope so.

24 I would characterize it this way. There's a sort  
25 of pretense that we're running at full capacity and we have to  
26 shut them down to cool them off. That doesn't say I'm  
27 exercising market power, holding this back until I get a better  
28 price, or whatever. I'm pretending that I have to do this. The

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1 unintended consequence is, there's less power out there at this  
2 particular time.

3 Is there another kind of evidence of physical  
4 withholding?

5 DR. WOLAK: Essentially, I can't think of  
6 anything else. Physical withholding is just the fact you're not  
7 making capacity available. It could be you're not making it  
8 available because of forced outage; it could be because you're  
9 not making it available because --

10 SENATOR KUEHL: But you're claiming it's forced  
11 outage.

12 DR. WOLAK: Yeah, or you're just saying --

13 CHAIRMAN DUNN: A quick question, Senator?

14 If I can phrase the question, instead of other  
15 acts of physical withholding, is there other acts of  
16 withholding?

17 SENATOR KUEHL: Well, I want to get next to this  
18 notion of economic withholding, but that's real different.

19 CHAIRMAN DUNN: I understand.

20 SENATOR KUEHL: I'm talking about keeping  
21 power -- holding power back. The only evidence that we might  
22 have of it would be circumstantial comparative evidence; is that  
23 right? Because that's the conversation that we were just  
24 having.

25 DR. WOLAK: Short of getting inside a generator's  
26 head, yes.

27 But remember, I mean, I think what -- the  
28 distinction between economic and physical withholding is not a  
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1 very worthwhile distinction. Essentially, think of it as  
2 bidding too high a price, versus not making the capacity  
3 available, has the same outcome in terms of the market. Both  
4 say that price rises.

5 SENATOR KUEHL: And I want us to detail both of  
6 those kinds of withholding, but I do think that the evidence,  
7 for purposes of our investigation and for the purposes of the

8 reports, the evidence is a different set of evidences; right?

9 DR. WOLAK: Yeah, I would argue that --

10 SENATOR KUEHL: Economic withholding goes to --

11 DR. WOLAK: I would argue that it's virtually  
12 impossible to kind of tell the difference between the two. I  
13 mean, withholding is essentially just -- I mean, essentially,  
14 raising price is raising price.

15 I can think of it as, I can do it one of two  
16 ways. But the outcome is the same. I'm doing it to essentially  
17 raise the market claim price.

18 SENATOR KUEHL: I understand the outcome is the  
19 same, but I need to --

20 DR. WOLAK: And neither -- both are treated the  
21 same under U.S. anti-trust law. Like, for example, there is no  
22 law against me saying I don't want to sell to you. And there's  
23 no law against me saying, I'm going to raise my price that I  
24 sell to you. And moreover, I can make those exactly equivalent  
25 by saying, the price I'm going to sell to you at is infinite.

26 SENATOR KUEHL: Right, and I'm not challenging  
27 this. I'm just trying unpack it, to be able to understand what  
28 we need to look at and know in order to come to a conclusion or  
12

1 not about withholding.

2 DR. WOLAK: Right, and what I'm trying to say is,  
3 don't focus on this distinction, because both are unilateral  
4 sort of exercises of market power. Neither are illegal under  
5 U.S. anti-trust.

6 Now, to the extent that they become conscious in  
7 terms of parallel behavior, in the sense that you bid high on  
8 the same days that I bid high, and there's evidence that there  
9 was some sort of communication, explicit or implicit  
10 communication taking place for us to know to both bid high on

11 that day, we're getting into the realm of something that is  
12 illegal.

13 SENATOR KUEHL: Please don't assume that I'm only  
14 interested in actions that would be considered illegal in this  
15 context.

16 I'm extremely interested in actions that I would  
17 consider, albeit legal, not kosher.

18 You knew I was going to say that; did you.

19 I think that there's a level that we're also  
20 exploring, whether we want to castigate anyone for it or not.  
21 We want to understand, just for purposes of the public's knowing  
22 what actions may or may not have been taken by the generators.

23 For instance, if all of their costs were  
24 accounted for, and then the price they charged was way beyond  
25 that, it may be legal, but I think it's important for us to know  
26 that, and therefore, we would want to compare their costs to  
27 what, you know, they were asking. We want to know about bidding  
28 so high that you're actually doing economic withholding.

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1 DR. WOLAK: Well, I think the evidence there is  
2 very clear. Both in terms of, as we discussed, that the  
3 evidence is, particularly in the Department of Market Analysis,  
4 and I'm sure Eric will talk about it, and the analyses I've done  
5 looking at the bid data myself, is that clearly bidding vastly  
6 in excess of the operating cost of the unit, taking even the  
7 most conservative estimate of the cost, so I mean, there it's  
8 not a problem.

9 But I guess what I'm saying is, I agree, that may  
10 be sort of getting as much as you can right now from the market,  
11 but I just wanted to just sort of make the distinction that I  
12 think that the evidence there is very clear for that behavior.  
13 But just to say that that's not something that's illegal.



14                   SENATOR KUEHL: Although you did indicate that it  
15 may be illegal if it looks collaborative. And that would mean  
16 that we may need to tease out the individual behavior, and then  
17 suddenly find that they all did it.

18                   I'm just thinking --

19                   DR. WOLAK: Once again, it's like, the example  
20 would be, why does the airline, every airline that you call up,  
21 charge the same price on the route? Well, one interpretation  
22 would be --

23                   SENATOR KUEHL: The answer is because they  
24 can.

25                   DR. WOLAK: One interpretation, though, that they  
26 would try to say is, it's a very competitive market, and  
27 anything gets arbitrated away.

28                   SENATOR KUEHL: We need to charge as much as we  
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1 possibly can so long as the other guy's doing it. I understand.

2                   Thank you, Mr. Chairman.

3                   CHAIRMAN DUNN: I've got a line up of three that  
4 want to do some more questioning.

5                   I want to interrupt these proceeding to ask the  
6 pleasure of the committee. We've all ready let the State  
7 Auditor go because we've gone much longer than we expected. Eric  
8 is sitting back here patiently, probably running out of  
9 patience.

10                   Eric has indicated, you are available if we kick  
11 you over to the next hearing.

12                   DR. HILDEBRANDT: Yes, and I'm staying around in  
13 any event.

14                   CHAIRMAN DUNN: I understand that.  
15 Are you doing okay, Professor?

16                   DR. WOLAK: I'm fine.

17 CHAIRMAN DUNN: There are times you look like  
18 you're having fun, actually, as sick as that is.

19 DR. WOLAK: No problem.

20 CHAIRMAN DUNN: I would make a suggestion to the  
21 committee, and let me know if there's any opposition, that we  
22 defer, because we're already at past 5:30, we defer Eric's  
23 testimony to the next hearing, and we finish up today with  
24 Professor Wolak, and then conclude the hearing for today.  
25 Everybody acceptable to that? I see a lot of, Oh, yes.

26 Eric, thank you very much for your patience as  
27 well, too.

28 Let me go on to the order we have. Senator 12

1 Johannessen, then we're going to the Assemblywoman, then to  
2 Senator Morrow.

3 SENATOR JOHANNESSEN: Thank you.

4 Back to the question of conspiracies and  
5 collusions, and all the rest of the good stuff.

6 One of the things that we're talking about is  
7 that they're running generators at capacities, and so forth.  
8 Well, there's only a four percent increase from '99 to 2000. It  
9 should be pretty easy to determine, I would think, what the  
10 capacities of these units have been and how that developed. I  
11 mean, you don't have to be a Phi Beta Capa to figure that one  
12 out.

13 Then, when you have wholesale cost of that same  
14 electricity going up 266 percent in the year, then obviously  
15 market forces are involved in that as well.

16 To the best of your knowledge, how many  
17 generators do we have within the state? I know we can't do much  
18 with the ones outside. In fact, I'm not so sure we can do  
19 anything here, either, from that basis.

20                   And I've been in business all my life.  
21   Government is not going to tell me what I'm going to do, when  
22   I'm going to do it, where I'm going to do it, and if I'm going  
23   to do shut down or otherwise, unless I get on the telephone, and  
24   I say, "Hey Joe, I think we can get some more money out of this.  
25   Why don't we shut this down for a week and let's see what  
26   devel ops. "

27                   CHAIRMAN DUNN:   You're not referring to me,  
28   "Joe. "

12

1                   SENATOR JOHANNESSEN:   No, not you.   You wouldn't  
2   do that.   You're an attorney, and you're pure.

3                   SENATOR KUEHL:   Notice that that was a  
4   conj unct ive.

5   [Laughter. ]

6                   SENATOR JOHANNESSEN:   So, I don't think it is --  
7   I think your answer's correct in the fact that you cannot go  
8   after someone for not wanting to produce something, or someone  
9   that says, "Hey, Mabel, let's go to Hawaii, and sit on the  
10   beach, and drink fermented coconut juice for two weeks."   You  
11   can't do that.

12                   But the tie-in is there.   I mean, it is a clear  
13   avenue as to how this was developed.   The question is whether or  
14   not we can put the bow on the package.

15                   Now, someone in with these generators ordered the  
16   shutdowns.   How many of these people are there that we can, in  
17   the universe of those that we can, perhaps, get, Mr. Chairman,  
18   to testify as to who ordered the shutdowns, and who they were,  
19   because someone in the company ordered a shutdown, and it has to  
20   be the main person.   Someone down the line, at least in things  
21   that I've been supervising, surely wouldn't take that  
22   opportunity to do that.   It has to come from up above.

23                   It is too much to ask to find a smoking gun. I  
24 understand that.

25                   But would it be of benefit, Mr. Chairman, to ask  
26 some of these individuals to come down just to verify and to  
27 question as to what happened, and why the shutdowns occurred, at  
28 least some of the major ones?

12

1                   CHAIRMAN DUNN: Yes, absolutely, Senator  
2 Johannessen.

3                   And I don't mean to keep referring to this, but  
4 it is an issue that we are looking at, and we're going to be  
5 taking everybody's input on that as well, too.

6                   DR. WOLAK: But remember the sick day. There  
7 will be a very logical explanation.

8                   SENATOR JOHANNESSEN: Yeah, I remember the sick  
9 days, and if somebody had too many of them, I fired them. But  
10 besides that, you mean. No, I understand that.

11                   But there has to be a thread, circumstantial  
12 evidence maybe, but there's a thread that goes through this, all  
13 the way back in '92, '93, '94, '95. And it starts gaining  
14 momentum as it comes back up again.

15                   There's a thread in this that is obvious. Now,  
16 can it be used to, perhaps not in the criminal court, but it  
17 could possibly be used in a civil court?

18                   DR. WOLAK: Well, the interesting thing from my  
19 perspective is, it gets back to, once again, FERC, and FERC's  
20 unwillingness to learn from international experiences that I, in  
21 the mid-1990s, wrote a paper on, on the U.K. market, and noted  
22 the fact that they have a similar forced outage problem.

23                   In fact, the way that they paid generators was,  
24 they paid a payment for -- to generators to -- the smaller the  
25 reserve margin was in a given hour, you would get a much higher

26 capacity charge. And so, what the generators would do is, they  
27 would essentially declare themselves out. That would set a very  
28 high capacity charge for the hour.

12

1 Then they would magically say, "Oops, we fixed  
2 it. We're all ready." And the price would be set at that price  
3 that reflected the capacity charge.

4 I actually presented that to a bunch of the staff  
5 at FERC, and noted that, "Look, you really have to be aware of  
6 these availabilities standards." And one of the first things  
7 that you would want to do in any market is essentially worry  
8 about this fact that, different from in a vertically integrated  
9 regime, there is the unverifiable forced outage problem in a  
10 competitive market because it's a great way to withhold capacity  
11 from the market and drive up the price.

12 And the interesting thing is, this is not only a  
13 problem now that's cropped up in -- potentially in California,  
14 but the forced outage rates in the ISO New England market are  
15 significantly higher more recently now than they were  
16 previously. And I suspect that unless FERC gets the message,  
17 this will spread to other markets.

18 CHAIRMAN DUNN: If I can interrupt, in other  
19 words, if they have a hot summer in that area, we could seeing  
20 the same thing occur there that has occurred here?

21 DR. WOLAK: Certainly, yes.

22 The good news for them is that they're hedged.  
23 But the bad news for them is, their price cap is a thousand.  
24 So, even though they, say, only have maybe 10 percent on the  
25 spot market, their upside risk is \$1,000 on the spot market for  
26 that.

27 So, if it's very hot from -- and moreover, if  
28 it's very hot from western Maine to -- or eastern Maine to

1 western Pennsylvania, then we've got the simultaneous peak  
2 problem, and then it's really going to be interesting.

3 CHAIRMAN DUNN: So we can welcome others to this  
4 party.

5 DR. WOLAK: Yes, exactly.

6 CHAIRMAN DUNN: Senator Johannessen.

7 SENATOR JOHANNESSEN: Well, understand that when  
8 I do this, I'm trying to really come, I guess, to a personal  
9 philosophy as to how we deal with things like this.

10 And by the way, this is not an unusual thing to  
11 do. In gas they do it; in electric they do it; in oil.  
12 Whatever it happens to be, it is market manipulation. We just  
13 haven't witnessed this kind of market manipulation before, and  
14 that is due to many forces that take care of that.

15 I mean, it is a market manipulation, but how we  
16 got to that is what I, quite frankly, am very, very interested  
17 in.

18 What I'm trying to, in my own mind, come up with  
19 is, if, in fact, we can substantiate what I believe, then  
20 whether right, wrong, indifferent, or anybody can be accused of  
21 something and go to a courtroom, that is not the most important  
22 thing that I'm after.

23 What I'm after is, that there is a problem with  
24 services, products and services, which are of vital, vital  
25 life-threatening importance to us. That needs to be treated  
26 different.

27 For example, as businessman, if I bake bread, and  
28 someone was starving, and I was the only one that could supply

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1 that bread, life-giving bread, and I held it up to whatever the  
2 traffic could bear, then it becomes a moral question besides an

3 economic question. And that, in turn -- I hope I'm wrong -- but  
4 that in turn dictates that we need to put it into context of  
5 controls by government.

6 And believe me, as far as I'm concerned,  
7 government agency never given me an ounce of fuzzy good  
8 feelings.

9 So, what I'm trying to determine here is, if we  
10 can bring this back to logic and reasonable, that's not a  
11 premium, either.

12 But if we can bring this back without going into  
13 government controls, if that is possible, then how do we do  
14 that? What is the timeline we have to do that? Can we do it in  
15 two years if all the regulations were put aside? I think we  
16 can.

17 DR. WOLAK: You know, I mean, I guess -- I'm  
18 sorry.

19 SENATOR JOHANNESSEN: Do you understand the  
20 dilemma I'm in.

21 DR. WOLAK: Yes.

22 SENATOR JOHANNESSEN: Because we have all ready  
23 wasted '96. And I was part of the '96. I was part of the '95.  
24 I was part of the '94. In fact, I was part of it back in '85.

25 But the point is, all of this time we have wasted  
26 where we could have done something.

27 DR. WOLAK: We still can. There's still a lot  
28 that we can do, even before this summer.

13

1 SENATOR JOHANNESSEN: Okay, what can we do?

2 CHAIRMAN DUNN: May I make a request, Senator  
3 Johannessen.

4 That's probably going to be, if you don't mind  
5 deferring the question, basically the last question that I have

6 for the Professor.

7 DR. WOLAK: But I just want to comment on one  
8 thing that you say.

9 The whole thing that you were leading up to --  
10 the vital commodity, what are we going to do -- you could have  
11 been back in sort of the founding of essentially the passage of  
12 the Federal Power Act. The statements that were made of, look,  
13 this is a vital commodity; we need to ensure that it is provided  
14 to consumers at just and reasonable prices, and if you read the  
15 Federal Power Act, it's sort of, there it is.

16 But unfortunately it assumed that there would be  
17 an agency, a federal agency, that would enforce that law. And  
18 when we don't have a federal agency that enforces that law, now  
19 we have a problem.

20 SENATOR JOHANNESSEN: So, in your opinion, then,  
21 the biggest problem we have that we're dealing with right now is  
22 FERC?

23 DR. WOLAK: Yeah, no doubt. I mean, you  
24 basically -- I think, at least I would hope, the things that  
25 we've discussed of both their standard for assessing  
26 market-based rates either makes no sense, or they're not  
27 enforcing it because, clearly, market participants have the  
28 ability to unilaterally affect the market price, even though the  
13

1 FERC said they didn't.

2 And so, the entire problem lies completely with  
3 them failing to enforce the Federal Power Act. That's by their  
4 own admission. They have said in their reports that we don't  
5 think rates are just and reasonable in California, and we think  
6 they reflect the exercise of market power.

7 And you would simply say, well, it says in  
8 your -- in the Federal Power Act that you're supposed to take



9 actions to correct that, to make sure that rates are just and  
10 reasonable, and to order refunds of any overpayment in excess of  
11 just and reasonable rates.

12 SENATOR JOHANNESSEN: And the last question,  
13 Mr. Chairman, is going to be asking him regarding what we can  
14 do, and so forth.

15 I would like to know, in your opinion, and I'm  
16 sure you have looked into the power that's available in the  
17 emergency declaration that the Governor has made, to what extent  
18 the Governor can free-up, can free-up the private industry, if  
19 you will, or whatever, in order to solve the problem?

20 Basically, the construction of lines, pipelines,  
21 Path 15, which I'm familiar with, whether or not, under this  
22 emergency declaration, we can, in the upgrades, if that can be  
23 done, if we can delay the upgrades. As a matter of fact, if we  
24 had my way of doing it, we may even restart the nuclear energy  
25 plants, but that's another story altogether.

26 I would appreciate if you would do that.

27 CHAIRMAN DUNN: Assemblywoman Matthews, and then  
28 Senator Morrow.

13

1 ASSEMBLY MEMBER MATTHEWS: Thank you very much.

2 I wanted to follow-up on Senator Kuehl's question  
3 just for clarification for me. There were three ways that the  
4 generators didn't provide power, at least that's my  
5 understanding. They either bid so high that the power wasn't  
6 available, it wasn't in the grid, or they said they didn't have  
7 any, that it was all committed someplace else, or they had an  
8 outage.

9 Is that correct? And the differences didn't  
10 matter; we still didn't have their power available. Was that  
11 the point that you were making?

12 DR. WOLAK: The point that I'm trying to make is,  
13 that there are a variety of ways. Think of it as, if I am a  
14 price taker, think of it, I have a curve that gives my operating  
15 cost as a function of my level of output. If I know I have no  
16 ability to influence the market price through my bid, I'm going  
17 to bid that curve in.

18 To the extent that I have the ability to  
19 influence the market price, I'm going to bid a curve that is  
20 above that curve. Now, there's a whole bunch of ways I can do  
21 that by making the curve end shorter than my capacity, by  
22 keeping the curve always above that curve.

23 So, but what you're simply doing is bidding a bid  
24 curve that is above your cost curve. And what that has the  
25 effect of doing is raising the market price.

26 ASSEMBLY MEMBER MATTHEWS: Your answer is much  
27 more complicated than my question was.

28 The point was that they used -- they had a 13

1 different excuse, or they had three different excuses for not  
2 providing power. Whatever their motivation was, they used three  
3 different reasons. And one of the reasons was, we were down for  
4 repair.

5 DR. WOLAK: Yes.

6 ASSEMBLY MEMBER MATTHEWS: Then I just want to  
7 return to how we can possibly demonstrate whether or not those  
8 outages were random.

9 You indicated that we might need information that  
10 you don't have at the ISO because, of course, you didn't always  
11 have that data. You weren't always around, so you didn't have  
12 that data, that you needed something --

13 DR. WOLAK: No, it wasn't collected. It wasn't  
14 mandatory for the generators to submit that.

15                   ASSEMBLY MEMBER MATTHEWS: The point that I want  
16 to make is, perhaps there is another way to get that kind of  
17 information, or to demonstrate in some other way whether that's  
18 random.

19                   I know with any -- within almost every industry  
20 there is information that is collected kind of global. And so,  
21 while we might not have it for the plant for which we're trying  
22 to demonstrate whether or not it's random, there is a way to  
23 demonstrate it just on the basis of other similar plants, you  
24 know, or the industry elsewhere.

25                   I'm just suggesting that that information might  
26 be available that way, perhaps not within California, but  
27 someplace else, similar plants.

28                   DR. WOLAK: There is what's called the National  
13

1       Electricity Reliability Council, which essentially all the  
2 generators, I think -- I'm pretty sure, voluntarily submit  
3 information to in a sort of industry association, were they  
4 benchmark offer reliability standards. And to the extent that  
5 that sort of information could be made available, and they break  
6 it out by the various characteristics of the plant, the age, the  
7 capacity, the fuel type, et cetera.

8                   ASSEMBLY MEMBER MATTHEWS: I thought that Senator  
9 Bowen was suggesting that the same generators operate, you know,  
10 multiple plants around the country. And we could compare plants  
11 from which they sell power into California to plants where they  
12 sell elsewhere, but also more globally, as you just described.

13                   CHAIRMAN DUNN: Senator Morrow, then Senator  
14 Bowen.

15                   SENATOR MORROW: Thank you, Mr. Chair. I  
16 apologize, Mr. Chair, if I skirt on ground that's already been  
17 covered, but it's important that I get this straight in my mind.

18                   A moment ago, you said the purposeful withholding  
19 is not illegal under anti-trust law.

20                   Is the same said, or can the same be said to be  
21 true with regard to FERC tariffs or regulations?

22                   DR. WOLAK: It's my understanding no.

23                   SENATOR MORROW: No, meaning --

24                   DR. WOLAK: That FERC essentially says,  
25 purposeful withholding is not acceptable.

26                   SENATOR MORROW: So, that would be in violation  
27 of a FERC tariff?

28                   DR. WOLAK: Yes.

13

1                   SENATOR MORROW: That's clear; thank you.

2                   DR. WOLAK: But if they don't see market power,  
3 it's tough to say they'll see purposeful withholding.

4                   And the difficulty there was, they actually -- I  
5 don't know if you're familiar -- did a staff study of the outage  
6 rates, where they essentially said they did telephone interviews  
7 with the plant operators, and asked for explanations of forced  
8 outages, and essentially said, there wasn't any evidence that  
9 these weren't real forced outages, et cetera.

10                   To me, that just simply verified that a sick day  
11 is a sick day.

12                   SENATOR MORROW: Assuming for the a moment that  
13 the lights are on with the Federal Energy Regulatory Commission,  
14 and it's a big assumption, perhaps, is there any criminal  
15 penalties associated with a violation of FERC tariff?

16                   DR. WOLAK: You're starting to get into grounds  
17 where the lawyers know better than I do.

18                   I think that there are things that can happen,  
19 but I don't know exactly what they are in terms of, if you are  
20 found guilty of this, they can revoke lots of things and

21 penalize you, is my understanding. But I don't know exactly --

22 SENATOR MORROW: That's fine.

23 DR. WOLAK: I think that's certainly something  
24 worth investigating. It's my understanding there's things that  
25 can happen as a result of that.

26 CHAIRMAN DUNN: Senator Bowen.

27 SENATOR BOWEN: I just want to make it clear  
28 that, while certainly the question of whether power was withheld  
13

1 is one question that we need to look at, it may well be that we  
2 find that there is a significant difference between comparably  
3 situated plants out of state, or '94 and 2000. I don't know.

4 But it seems to me that, as we talked earlier in  
5 the discussion, there's more than one way to work, game,  
6 manipulate, pick your verb, it depends on --

7 DR. WOLAK: Maximize profits.

8 SENATOR BOWEN: -- point of view. Yes, that's a  
9 good way to put it. There's more than one way to maximize  
10 profits, and we ought to be looking at all of the ways that that  
11 might have occurred, not just for the purpose of figuring out  
12 what has happened, but because we are dealing with the same  
13 players in the future. And if the future is dysfunction, the  
14 price tag, potential price tag, is much higher than the price  
15 tag of the dysfunction today.

16 In order to understand how to reform the market  
17 rules, change the system, we need to understand what's  
18 happened.

19 I just hope that as we go through this, we remind  
20 ourselves that we're also trying to look at how to reform the  
21 system so that we're never again in this kind of position.

22 DR. WOLAK: That's something we could spend till  
23 midnight on, since that's something near and dear to my heart.

24                   SENATOR BOWEN: I've read more than a few of your  
25 words on that topic.

26                   CHAIRMAN DUNN: I want to return for a moment,  
27 Professor, again, what started this whole discussion was  
28 coordinated behavior, and what sort of the indirect evidence we  
13

1       ought to look at to determine whether there was coordinated  
2 behavior?

3                   We did talk about the meaning of communication.  
4 We talked about behavior outcomes, such as, and we examined in  
5 some detail the forced outages.

6                   I have another one that I want to just discuss  
7 with you briefly to see if this might be an area we ought to  
8 explore to determine whether it's indirect evidence of  
9 coordinated behavior.

10                  That's how the stakeholders in the wholesale  
11 electricity market perform with respect to the sale of their  
12 capacity, or their failure to sell the capacity that they have.

13                  Can you comment on that particular area,  
14 Professor, as far as how we could look at not selling one's  
15 capacity? And how that may indicate whether, in fact, there's  
16 coordinated behavior that occurred?

17                  DR. WOLAK: Well, I guess to the extent that --  
18 it gets back to the issue of the distinction between, in a  
19 market where I don't perceive that I have any ability to  
20 influence price, what I would do. Well, what I would do is, I  
21 would want to sell any time that the price is in excess of my  
22 operating cost, because that gives me returns to capital. So,  
23 and essentially pays -- allows me to pay my shareholders as well  
24 as my creditors.

25                  So, what you would expect to see is, if what we  
26 see as we look in a given hour, and we see that there is

27 unloaded capacity that has a production cost that's in excess of  
 28 the market clearing price, and we see that consistently across

13

1 all players in the market at the time, that sort of raises the  
 2 first red flag, because you'd say, gee, if this was a  
 3 competitive market, we wouldn't see this because we would, in  
 4 fact, see that essentially there's money on the table in the  
 5 current hour that the generators are giving up, because if they  
 6 sell more, they make more money in excess of their operating  
 7 costs. So, they're giving up money right now.

8 And the question would be, why are they giving up  
 9 profits right now? And the only answer would be the expectation  
 10 or the irrationality on their part, which I certainly say is  
 11 certainly not true. They are very clever and very sophisticated  
 12 in germs of what they're doing.

13 But it's the fact that they perceive that the  
 14 future profits from continuing to do what they're doing are  
 15 sufficient to compensate them for essentially not going and  
 16 selling as much as they can in this current hour. Because if  
 17 what they do is, they sell more in this hour, then everybody  
 18 else will -- everyone else will say, gee, this firm sold all  
 19 they could in this hour, so we should sell all we can in the  
 20 next hour. And sure enough, if you like, the sort of very nice  
 21 environment where everybody is earning operating profits  
 22 suddenly goes away.

23 So, one of the things that certainly raises  
 24 concern is, if we saw in a market everyone had unloaded  
 25 capacity, price was in excess of all of their operating costs,  
 26 yet nobody, if you like, is defecting in terms of trying to sell  
 27 more to make more profits in that hour, the only answer would  
 28 be, or one of the biggest answers would be, what we're doing is

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1 saving it for later. And saving it for later because of the  
2 fact that we perceive that future profits will, by continuing to  
3 keep the capacity back, will be much, much higher.

4 And this gets where you get into the realm of  
5 this sort of what is in anti-trust law is conscious parallelism.  
6 You would sort of say, well, there doesn't appear to be any  
7 other explanation for this besides the fact that it is, in some  
8 sense, rational because I somehow perceive that if I sell a  
9 whole lot in this hour, then this sort of not explicitly  
10 coordinated agreement will break down, and it's sort of bad for  
11 all of us.

12 So, somehow, if firms have managed to get to this  
13 sort of circumstance, you could think of the same sort of thing  
14 happens in airline markets, is a new entrant, Southwest comes  
15 in, and Southwest is very credible to say, we're going to cut  
16 fares. And all of a sudden, the fare on a route that used to be  
17 \$600 is now \$200, because everybody says, well, Southwest is  
18 going to take all of our business, and so that's, if you like,  
19 the noise that destroys the old equilibrium.

20 CHAIRMAN DUNN: If I can try to put that lay  
21 terms, and correct me if I'm misstating it.

22 That basically, what may have occurred quite  
23 certainly would raise a red flag, if it occurred, is that if  
24 collectively the players acted to forebear profits they could  
25 make today, because they see greater profits tomorrow. I mean,  
26 stand alone, that's fine. That's a business decision of any  
27 given one company: Well, we can make profits today, but we can  
28 make greater.

14

1 But where the problem lies is, if you find such  
2 behavior in a market, in a truly competitive market, it's likely  
3 that someone, one of those players, will defect and seize the



4 opportunity for the profit today, because they have no guarantee  
5 there's going to be a profit tomorrow because you may defect  
6 tomorrow. And if I forebear today, I may lose that additional  
7 profit I wanted tomorrow if you defect tomorrow.

8 DR. WOLAK: Yes, correct.

9 CHAIRMAN DUNN: And so, the only way for that to  
10 work is if all the players basically --

11 DR. WOLAK: However it happens, somehow fixture  
12 out that it's better not.

13 CHAIRMAN DUNN: That we all forebear.

14 DR. WOLAK: -- forebear.

15 CHAIRMAN DUNN: Even though, in a competitive  
16 market, one would say, one of those players ought to go for the  
17 profit today.

18 DR. WOLAK: Right.

19 CHAIRMAN DUNN: And in this market that we find,  
20 the wholesale market in electricity in California, do you see  
21 that there is at least red flags of that type of behavior?

22 DR. WOLAK: Well, you certainly see it. I mean,  
23 and this is sort of, if you once again were going to describe a  
24 market where this sort of conscious parallelism can arise, once  
25 again, the characteristics of the product that you would  
26 describe would be electricity. In particular, you'd say, being  
27 subject to capacity constraints.

28 Well, because one of the things that's going to  
14

1 make it very profitable for me to defect today is the fact that  
2 I can sell the whole market. But if I'm constrained in my  
3 capacity, then effectively all I can sell is my capacity. And  
4 so, what I may make on selling greater quantity, I'm not going  
5 to make it up because I'll depress the price too much. So, I  
6 won't want to defect because of my capacity constraints.

7                   The other is the fact that every single day,  
8 we're playing effectively the same market, with the same  
9 players, and facing similar demand conditions throughout the  
10 day. So, in other words, it's sort of repeated, and you could  
11 kind of think that not much new information is coming to  
12 essentially cause me to have uncertainty about how you might  
13 react.

14                   So, the other problem of it's standard is the  
15 repeated interaction, you know, in a similar environment, is  
16 another one of those.

17                   Then moreover, the other one is the certainty of  
18 demand. You could kind of think of the good news for  
19 competitors in this market is the fact that they can probably  
20 forecast demand in this hour, today, next year with an accuracy  
21 close to probably five to ten percent. And there's very few  
22 products that you can imagine that you'd be able to forecast the  
23 demand at that level of accuracy.

24                   So then, the only thing that I know in terms of  
25 uncertainty is, how you might bid. So, if somehow we get into  
26 this equilibrium where you're selling 50 and I'm selling 50 in a  
27 period when demand is this, there's nothing really to, if you  
28 like, noise-up the interaction that we have to cause me to be  
14

1 suspicious of you, and hence, defect.

2                   So, all the characteristics of both demand as  
3 well as the product make it pretty susceptible to these sorts of  
4 things.

5                   CHAIRMAN DUNN: I'll go to you in a second,  
6 Senator Johannessen.

7                   Again, reading all those textbooks that we've  
8 been digesting about this type of arena, one of the  
9 characteristics of a market in which you find concerted

10 activity, coordinated activity is what I'll just label in lay  
 11 terms a discipline. That is, for it to be successful, if there  
 12 was an implicit agreement, you have to be able impose discipline  
 13 to make sure there aren't any defectors. But that can be done,  
 14 discipline, my word, via some sort of punishment mechanism, but  
 15 some markets, it's not necessary for punishment because the  
 16 carrot is so great that everyone's going to stay in a  
 17 coordinated activity environment.

18 An argument could be made that this particular  
 19 market had that big carrot, and that is, basically unlimited  
 20 profits in the tomorrow market versus today.

21 DR. WOLAK: Yes. I think it gets back to the  
 22 point of capacity constraints. Is that, because of the fact I  
 23 know that you're capacity constrained; you know that I'm  
 24 capacity constrained; both of us know that neither of us can  
 25 undercut too much. And that's very valuable information for all  
 26 of us to know.

27 Now, to the extent that there's lots of imports  
 28 that are sitting on the boundary of California, then essentially  
 14

1 I may know something about you; you may know something about me,  
 2 but imports is something we're very uncertain about. So,  
 3 imports are always coming in.

4 So, that's why, if you say in 1999, we saw much  
 5 more of the behavior that looked like the competitive market.  
 6 But once those imports dry up, then essentially think of it as,  
 7 we've reduced one very large source of uncertainty about the  
 8 demand that's left over to be met by us, as in-state suppliers.  
 9 We know there's very little demand that's left over because  
 10 there's not much imports, so essentially we've reduced, if you  
 11 like, the amount of sort of information we have to process to  
 12 know how to bid.

13 CHAIRMAN DUNN: Two last questions.

14 In your experience in looking at these various  
15 competitive versus anti-competitive markets, are there certain  
16 characteristics of a particular market that make it susceptible  
17 to coordinated behavior? If so, what are they, and do we find  
18 them in the wholesale electricity market here?

19 DR. WOLAK: Yeah, I mean, as I said, it's sort of  
20 the nature of demand, the capacity constraints, the repeated  
21 interaction. Those are certainly, if you like, the fact that  
22 supply -- it certainly helps that there's no inventories as  
23 well, because another source of essentially disciplining of  
24 competitive behavior is, I buy a lot when it's cheap, and then  
25 when you try to raise the price, I dump the stuff from inventory  
26 back on the market. So, I don't have any inventories to  
27 essentially discipline this sort of activity by market  
28 participants, so the fact that supply must equal demand at every  
14

1 point in time is another complicating factor.

2 So, as I said, it's as -- if you could sort of  
3 write down the product characteristics and the characteristics  
4 of demand that make it susceptible to this sort of activity,  
5 electricity is it.

6 CHAIRMAN DUNN: In other words, in California the  
7 wholesale electricity market was a prime candidate?

8 DR. WOLAK: Yes.

9 CHAIRMAN DUNN: For coordinated behavior?

10 DR. WOLAK: Yes.

11 CHAIRMAN DUNN: It's almost a huge invitation for  
12 it, the way that our wholesale electricity market ended up?

13 DR. WOLAK: Uh-huh, but this, I think -- but I  
14 think it's important to note that, once again, demand knew this,  
15 too. So essentially, it would be incumbent on demand to take

16 the sorts of actions to make sure that these sorts of things  
 17 would not occur. That's where forward contracting comes in, and  
 18 that's where price responsive demand comes in, and those are the  
 19 things that were missing.

20 In other words, combine with that the fact that  
 21 we had, if you like, a regular or whatever market structure that  
 22 prevented those sorts of actions from taking place, in fairness  
 23 to the generators, made the pickings very easy, so to speak.

24 SENATOR PEACE: Except that at the point in which  
 25 FERC sent a market signal by failing to act, the forward price  
 26 got so expensive that there was -- as we're now engaged in as  
 27 the state to purchase, there's very little reward in being in  
 28 the forward market, unless you're in the extreme forward market

14

1 for very, very long periods of time, which, I guarantee you, we  
 2 will be judged after the fact, to have made terrible mistakes.  
 3 Or, as in the words of Mr. Ackerman from the IEP, "giggle,  
 4 giggle, giggle. All these long-term contracts are sucker  
 5 contracts."

6 At the same time -- now, he tells me that over a  
 7 drink just before the next morning he testifies in front of  
 8 FERC, with, incidentally, five witnesses at the cocktail table,  
 9 which he obviously got to a little sooner than I did. Then he  
 10 testifies the very next day that the problem in California is  
 11 that the utilities aren't in forward contracts, when at night,  
 12 at the cocktail table, he's laughing at anybody who gets in to  
 13 the forward contracts because he knows perfectly well, this is  
 14 the worst time to get into forward contracts.

15 DR. WOLAK: Well, certainly for the next two  
 16 years. It get back to the points that we discussed earlier,  
 17 about essentially in order to mitigate market power, you have --

18 SENATOR PEACE: Markets tend to overreact. And

19 the key to being successful as a market participant is not to be  
20 one of those who are overreacting. And he's made -- I have a  
21 lot of respect for him -- a brilliant business out of being a  
22 private regulator. Their business is about substituting for the  
23 regulator. They need volatility for the Enron business plan to  
24 work, and they've done an extraordinarily good job at it.

25 Markets are about psychology. And the reason  
26 why you have market stop mechanisms in the stock exchange, and  
27 in every commodities exchange -- and, incidentally, energy is  
28 the only commodity in the United States that's exempted from the  
14

1 other commodity exchanges disciplines, all of which have stopgap  
2 mechanisms and whatnot, by virtue of a 1993 act of Congress --  
3 the reason why you have those mechanisms in place is that if  
4 market participants can shift the psychology to higher price  
5 points, and panic buyers into locking in those prices over long  
6 period of time at a high point, they not only reap the profit of  
7 the short-term, they imbed the profit for many years going  
8 forward.

9 This is a classic example of that happening.  
10 We've seen it happen in other commodities, particularly at the  
11 turn of the century, before we developed more sophisticated  
12 market monitoring mechanisms, in virtually every commodity and  
13 every exchange in the history of the country.

14 So, none of this is mysterious.

15 DR. WOLAK: I have a different interpretation,  
16 but --

17 SENATOR PEACE: What is it? I'd like to hear it.

18 DR. WOLAK: My interpretation, I think it gets to  
19 a question that Senator Johannessen asked, is, competition in  
20 this market takes -- I think one of the marketers said it best.  
21 He said competition in this market on a time horizon of a day

22 ahead basis is essentially traders playing video games. And  
23 they all have a common interest in keeping the price up. It's  
24 sort of, they're all playing a video game that essentially says,  
25 how do we get that price up.

26 And the thing is, if demand says, I won't say no  
27 on a day ahead basis, then essentially the sky's the limit.

28 SENATOR PEACE: Right, but that's the reason why  
14

1 having RMR contracts in the spot market instead of through  
2 capacity payments, or some sort of long-term commitment, is the  
3 core beginning point.

4 DR. WOLAK: I mean, I guess I would say it is  
5 that the competition will take place on the forward market. So,  
6 for example, this is where it becomes very important that you  
7 have a very finite time horizon for the time to build new  
8 capacity. Because if a generator came to you and said, "In  
9 2003, I will deliver power to you for \$500," you'll laugh at  
10 them. Why will you laugh at them? Because you know that you  
11 can go find some new entrants to essentially come and build at  
12 long-run average, and sign a forward contract to essentially get  
13 delivery two years from now at that long-run average cost of  
14 supplying power.

15 So, to the extent that there's going to be  
16 competition in this market, it takes place at that time horizon.  
17 In other words, you have to very much plan ahead. In the same  
18 sense that if you're an air traveler, if you book at the last  
19 minute to go to Washington from San Francisco, you're going to  
20 pay 2500 bucks. And to the extent you book three weeks in  
21 advance, you're going to pay \$300.

22 And it's the same exact logic the this market.  
23 And to the extent in the two-year period that we have right now,  
24 the only thing that essentially can solve the problem is FERC

25 intervention, which is unfortunate that it doesn't look like  
26 anything will be coming there, or essentially creating negative  
27 generation, which is demand response.

28 SENATOR PEACE: Betsy has posted today on her web  
14

1 site a list of questions that she says that she would like  
2 answered in preparatory to her apparent new willingness to  
3 consider price gaps. I don't know whether that means anything.

4 CHAIRMAN DUNN: Senator Johannessen.

5 SENATOR JOHANNESSEN: Perhaps you're going to  
6 cover that in the closing one, Mr. Chairman, so just rein me if  
7 you will.

8 What it tells me about the market place, it is no  
9 different, as the consortiums come together, as OPEC, or the oil  
10 industry. Their question is, we sell less and get paid more.  
11 What is the incentive to sell more to drive price down if you  
12 have control of the market?

13 We are in different ball game now. They control  
14 the market. Here we get back to FERC, I understand that. So,  
15 the solution then lies in additional capacity for generation.  
16 How do we do that?

17 DR. WOLAK: I guess I think the solution lies in  
18 just the opposite: getting demand involved. Because to me, the  
19 good news for California is, we don't have an excess capacity  
20 problem. We have know stranded asset problem any more.

21 SENATOR JOHANNESSEN: That's right.

22 DR. WOLAK: In fact, we're in a great position to  
23 make more efficient utilization. I mean, to give you a good  
24 example, if you took -- if you said, what is the average amount  
25 of capacity that we use in California to meet our demand? It's  
26 less -- it's roughly 27,000 megawatts.

27 In other words, if you took total demand, and you



28 divide it by the number of hours in the year, electricity 15

1 consumed divided by the number of hours in the year, on average  
2 we're using 27,000 megawatts.

3 So, think of it as what we could do is change the  
4 load shape in day to be a box. Then essentially we could  
5 consume 27,000 megawatts. And we'd have more than enough  
6 capacity to meet demand.

7 So the idea is, the ability to push demand around  
8 in the day, not consume electricity. In fact, I would imagine  
9 you'd consume more electricity because of the fact that you  
10 consume electricity in the off-peak hours to essentially store  
11 it to be able to use it in the peak hours to essentially keep  
12 your standard of living in the way that you live, the way that  
13 you would like to live. And in that sense, we're in great  
14 position to do that.

15 What we need to do is allow consumers to have the  
16 choice. Right now, consumers are paying the real-time price.  
17 What the difference is, is that we are denying them the ability  
18 to benefit from reducing their demand in periods when the price  
19 is extremely high, and benefit from purchasing in periods when  
20 the price is very low. And by denying them that ability to  
21 essentially benefit from that, what we're doing is paying more.

22 SENATOR PEACE: That's an economist's answer, and  
23 it's an accurate answer.

24 As you know, there are a number of people who  
25 tried to get real-time pricing in. The problem is, there is a  
26 time delay associated with getting real-time meters into the  
27 market.

28 DR. WOLAK: No, all the large customers have 15

1 them, interval meters.

2                   SENATOR PEACE: It may not be a technical delay.  
3 We were not able to get ubiquitous deployment of real-time  
4 meters, even to enough large customers. Otherwise, you'd have  
5 had that demand responsiveness.

6                   DR. WOLAK: Oh, no, they have the interval  
7 meters. I mean, PG&E, Edison, San Diego have interval meters  
8 available for their large customers.

9                   It's really purely a question of, I guess the  
10 best way I can see it is that right now, what we're doing is  
11 saying, we give you no incentive to reduce your demand, and then  
12 we make up the difference, with the difference between the  
13 wholesale price and the retail price, through essentially tax  
14 revenues.

15                   And the good news here is that we have the  
16 opportunity by doing this sort of program to essentially pay  
17 these large customers to go on real-time pricing, and  
18 essentially reduce the amount that California taxpayers pay,  
19 moreover, reduce the amount that they pay. In other words --

20                   SENATOR PEACE: I don't think anybody argues  
21 that.

22                   DR. WOLAK: It's very straight forward and they  
23 designed the plan to do just that.

24                   SENATOR PEACE: Nobody's arguing that point at  
25 this point.

26                   When you don't have --

27                   DR. WOLAK: You have the technology, there's no  
28 doubt.

15

1                   SENATOR PEACE: When you don't have all those  
2 elements in place, looking backwards, you can't expect the  
3 market to function.

4                   DR. WOLAK: Oh, the market would -- true, it  
Page 137

5 would -- may be difficult, but I think the market, you'd be  
6 surprised at how well the market could function if you had  
7 roughly these large customers on these meters and you said,  
8 look, we will work the following deal with you. We will say  
9 that you will get paid enough money each month so that if you do  
10 the sort of price response that we think you're capable of  
11 doing, and this is where the pointy headed academics come in, I  
12 don't know if you like the point headed academics, but this is  
13 where -- the sort of things we do for a living.

14                   Essentially, we will design this so that you have  
15 the opportunity to reduce your bill if you're price responsive.

16                   SENATOR PEACE: You already designed this one.

17                   DR. WOLAK: No, I had nothing to do with one,  
18 unfortunately.

19                   SENATOR PEACE: Your colleagues did.

20                   DR. WOLAK: And so, the idea would be -- and if  
21 you are price responsive, you will benefit. And moreover, the  
22 amount that you'll have to pay as taxpayers will be  
23 significantly less.

24                   And then, moreover, this solves your problem of  
25 helping to negotiate forward contracts because you've now made  
26 the spot market less attractive.

27                   And moreover, now you can exercise the monopsony  
28 power that you'd like to exercise as a buyer because you have

15

1 the ability to get demand to move around in the day.

2                   SENATOR PEACE: And I think that's precisely a  
3 big part of what the Governor's attempting to do right now.

4                   DR. WOLAK: No, I certainly hope so. Because, I  
5 mean, that is the key, because essentially, and it's not  
6 conserve. It is be flexible. In fact, it's less important that  
7 you reduce demand, although overall that's useful, that's

8 important, but it's more important that you have flexibility.

9 And the simple example I can say is, suppose that  
10 we had a load shape that 2700 megawatts every hour of every day.  
11 We wouldn't have a market power problem. I mean, we'd -- we  
12 have roughly 34,000 megawatts in the state. That would be a  
13 huge amount of excess capacity.

14 SENATOR JOHANNESSEN: In the timeline, what  
15 you're just saying now, then, is that, in essence, more capacity  
16 is not needed.

17 DR. WOLAK: No, I didn't say that. But I said  
18 that I would not -- the analogy that I would always say is that  
19 it's very important to remember that if you build capacity, and  
20 you want it to stay around, you've got to pay for it.

21 So, to the extent that you can serve the same  
22 amount of consumers with less capacity, then you have to pay for  
23 less capacity. Therefore, you can have the benefits of  
24 competition come through.

25 So, the simple example would be, how has airline  
26 deregulation benefitted consumers? Well, not in probably the  
27 prices that you pay, but in terms of the prices that people who  
28 are price responsive pay, who don't have to fly the next day as

15

1 business traveler, and they get lower -- so competition will  
2 deliver lower average prices, not lower prices to everyone.

3 And that is the important -- the same thing with  
4 electricity. The way that competition will deliver lower  
5 average prices to everyone is in making more efficient  
6 utilization of the capacity that we have. How will that  
7 happen? By essentially facing people with the real-time price  
8 signals and allowing them to benefit from it. That's the key  
9 part. They are facing the real-time price signals, but I get no  
10 benefit, additional benefit from reducing my demand in an hour

11 in whence the wholesale price is \$5,000 as I do when the  
12 wholesale price is \$20.

13 And, you know, there's just no other markets  
14 where that exists. I think a simple analogy would be, suppose  
15 that you ran a competitive telecommunications industry where  
16 what you did is, you said, I will only meter the total minutes  
17 of phone calls you make in a month. I don't know the duration,  
18 who you're calling, where you're calling. And now you go and  
19 you want to go sell the product, you ask the person, where do  
20 you call? And they say, I call my parents, and I call my  
21 internet service provider, and that's about it. So, they give  
22 you a very low rate. And then the second they give you that  
23 rate, you call everywhere in the world. And then they get the  
24 bill for network services, and they don't know who to assign it  
25 to.

26 Well, it sounds absurd, but that's exactly how we  
27 sell electricity to retail customers in these competitive  
28 markets. We essentially read the meter at the end of the month,  
15

1 read the meter at the beginning of the month, take the  
2 difference, and that's how much energy you consumed, and we  
3 don't know if you bought caviar, or if you bought, you know,  
4 ground round.

5 And what we want to make sure and do is, when  
6 you're buying caviar, we make you pay for it, and when you're  
7 buying the other --

8 SENATOR JOHANNESSEN: So, what you're basically  
9 promoting then is a lifestyle.

10 DR. WOLAK: Yes.

11 SENATOR JOHANNESSEN: Thank you very much.  
12 Forget it. That's social engineering.

13 DR. WOLAK: No, no, no, let me finish up on that.

14 SENATOR JOHANNESSEN: No, because that's social  
15 engineering, my friend. I was wondering when we were going to  
16 come to that point.

17 DR. WOLAK: No, no. Let me finish, though.

18 CHAIRMAN DUNN: One at a time, although I think  
19 we've veered way off course now.

20 DR. WOLAK: I think that -- let me finish.

21 So now, suppose, okay, suppose you're customer  
22 that says, I don't want to worry about electricity, okay? I  
23 just want a fixed price. Simple solution, buy a forward  
24 contract. You get a fixed price for as ever long a duration  
25 that you have.

26 But the trick is, you're going to pay more on  
27 average than the guy who plays the market. Why? Because you're  
28 offloading risk onto someone else, and there's a cost to

15

1 offloading risk.

2 So, if you want to not change your lifestyle at  
3 all, just buy the forward contract and you're done. And the  
4 person who sold you the fixed price rate will then go and hedge  
5 that with the supplier of the power.

6 So, it requires no lifestyle change whatsoever if  
7 you don't want. But it just gives you the option to benefit  
8 from being price responsive. It's about giving someone an  
9 additional option.

10 SENATOR JOHANNESSEN: What is that difference.

11 DR. WOLAK: I think you like choice.

12 SENATOR JOHANNESSEN: I do. But what is that  
13 difference between someone that says, I tell you what, let's  
14 raise the price of gas to force people to go into these little  
15 buggies, electric buggies. What's the difference between what  
16 you're proposing and what this is?

17 DR. WOLAK: Remember, I mean, if the fundamental  
18 premise that you think that there are tremendous barriers to  
19 entry into the generation market, so much so that --

20 SENATOR JOHANNESSEN: Wait a minute. Why  
21 wouldn't it be --

22 CHAIRMAN DUNN: Hold on.

23 I want to make a cautionary comment. Let's limit  
24 this one, because it is definitely off course.

25 I understand it's an interesting debate, but --

26 DR. WOLAK: So, the issue that I would just say  
27 is that if you believe that essentially it's so costly to get  
28 generation in, so that the outside threat of saying, as opposed  
15

1 to buying from you two years from now, I will build new  
2 capacity, and the generator says no, I don't think that you can  
3 credibly do that, because I know it takes so long to build new  
4 capacity. I know that there's so many regulatory barriers.  
5 Then you may want to say, let's go back to regulation.

6 But my view would be, why not streamline the  
7 generation siting process so at least you can have that credible  
8 option, so that essentially you can negotiate these forward  
9 contracts that you'd like to have two years from now.

10 Forward contracts from zero to two years, forget  
11 it, because you can't build a new power plant in the next two  
12 years. You're just subject to the whims of the market, and the  
13 only thing you can do is get demand to essentially, you know,  
14 help you to manage the risk.

15 SENATOR PEACE: I just want to be sure we get  
16 something straight. You seem to focus on large consumers with  
17 respect to --

18 DR. WOLAK: I'd love to do it for the small  
19 consumers, too.

20 SENATOR PEACE: With respect to load demand  
21 shift.

22 There was no shortage of participants in the  
23 retail market with respect to large customers, and providing a  
24 variety of product. There may have been a shortage of  
25 responsiveness. You had a Sony industry sitting right next to  
26 Kyocera, where Sony decided to get out of spot market exposure,  
27 and Kyocera doesn't. Those were independent business decisions  
28 in San Diego, where the market was wide open.

15

1 You had some who decided to stay exposed in the  
2 spot market, which had been a very favorable experience up until  
3 this summer. Some decided to lock into contracts. Almost all  
4 have real-time meter mechanisms of one sort or another. Very  
5 little in the way of large load is not already metered in that  
6 basis.

7 So, I don't know exactly why you feel -- and  
8 indeed, they have curved -- price mechanisms that encourage them  
9 to shift usage to other times of the day.

10 I totally concur with your desire of what you  
11 just said, in terms of also including smaller customers. That  
12 was the point I made. In fact, I carried a bill three  
13 consecutive years to require deployment of real-time meters.

14 The problem was, ironically, the advocates of  
15 competition, the guys that built the meters, didn't want the  
16 meters to be deployed by the utilities. They wanted the market  
17 to determine the deployment.

18 And the real world is, if you sit there and wait  
19 for the market to deploy the meters, it'll be a century before  
20 you ever get it deployed, and you never get the benefit. These  
21 guys could never understand the benefit to own businesses to get  
22 the meters deployed.



23                   We tried to do that, and the advocates of  
24 competition blocked the legislation to get those real-time  
25 meters in place, the very same guys.

26                   DR. WOLAK: I guess the only thing I would say in  
27 response is just, I think it's important to make the distinction  
28 between time of use pricing, essentially a fixed price that is  
15

1 higher in a peak period, and lower in an off-peak period.  
2 That's effectively fixed pricing for two prices. That's two  
3 fixed prices. That doesn't do the job. And that's what most of  
4 these customers are on.

5                   What you need is real-time pricing, where you  
6 face the actual real-time price.

7                   SENATOR PEACE: I agree.

8                   DR. WOLAK: So essentially, you send the signal  
9 right now, this is what it costs, and move away from this hour.  
10 Not ten cents in peak, five cents in off-peak, regardless of  
11 what the wholesale price is.

12                   And I completely agree with your sentiment on the  
13 real-time metering. I mean, to me, that would be a necessary  
14 infrastructure to establish any competitive market.

15                   SENATOR PEACE: We ended up with nothing but a  
16 pilot project. That's all we got out of it.

17                   CHAIRMAN DUNN: We're going to try to wind down.

18                   SENATOR JOHANNESSEN: Having worked on some of  
19 these issues for a long time, and having fought for the issue of  
20 water -- I'm Chairman of the Oversight Committee for Cal-Fed  
21 Water in California -- knowing the amount of water that is  
22 necessary for our state, and knowing what the cost of producing  
23 power to hydro that pays or itself handsomely -- look at Guapa,  
24 look at the various areas we're dealing with -- you can bring  
25 power down to half to three-quarter cents, and you probably can

26 distribute it at two-and-a-half to three cents max. We used to  
27 do it, but we haven't done it.

28 Now, what would be wrong instead of cranking down  
16

1 or raising the cost, raising the cost to encourage conservation,  
2 what would be wrong with building the capacity for water, for  
3 example, in order to ensure adequate power? What's wrong with  
4 that?

5 You're promoting, basically saying, the way to  
6 cure this is to put a level curve, and thereby saying that if  
7 you want to turn your washing machine on, do it at 10:00 o'clock  
8 at night, even though you may be working at that time. Or, if  
9 you have a packing facility that needs to have refrigeration  
10 going 24-hours a day, baby, you're going to carry the load  
11 because you are the one that's going to be stuck because you  
12 have no place to go.

13 It is a limit to what you can do on  
14 conservation. And every time I hear the word, we can conserve,  
15 we can conserve. That is bull hockey.

16 DR. WOLAK: I didn't say it.

17 SENATOR JOHANNESSEN: Okay, but what you're  
18 promoting is --

19 DR. WOLAK: No, I'm not promoting conservation.  
20 I am promoting load shifting. Essentially create load that  
21 essentially moves around. And my guess is, if you face people  
22 with the price signals, they would shift their load. In fact, I  
23 don't know how many that people I've spoken to have said, look,  
24 the second they put me on real-time meters, I'll shut off my  
25 lights at night because I get a benefit.

26 But until they essentially give me the price  
27 signal, I'm going to continue to consume the way I like to  
28 consume because there's no reason to.

1                   SENATOR JOHANNESSEN: The way you do it is raise  
2 the price of the product; isn't it?

3                   DR. WOLAK: No, no, no, no. Remember, raise the  
4 price -- let me ask you the question. Let me offer you the  
5 following choice.

6                   I mean, the important thing here is that,  
7 remember, lower average prices. So, to the extent to which  
8 prices are lower averaged over the year, that means my annual  
9 bill for electricity, the fraction of my budget I'm spending on  
10 electricity, falls. So the fact is that in order to get that to  
11 happen, in some hours I may have to pay a very, very high price  
12 for electricity, but I'll avoid those hours.

13                  But in exchange, I'm going to get other hours  
14 where the price is very, very low. I'll buy a lot in those  
15 hours. And the idea is that, on average, I'll get a lower bill  
16 for the month -- for the year, because of the actions that I'm  
17 taking.

18                  As it is, as I say, right now you are paying the  
19 real-time price over the entire year. It's just that all I'm  
20 saying is, give people the right to essentially benefit from  
21 shifting their load from the times when it's very, very costly  
22 on the wholesale market to procure power, and very, very cheap  
23 on the wholesale market to procure power.

24                  In other words, just give them that choice. You  
25 give them that choice, and you can get by, serve the same number  
26 of consumers with less capacity.

27                  SENATOR JOHANNESSEN: Sure, I can have a little  
28 bug running around --

1                   CHAIRMAN DUNN: And also, if we can bring this  
2 discussion to an end, because as I've said I think three times

3 now --

4 DR. WOLAK: But remember, I agree with you --

5 SENATOR PEACE: That's all great and wonderful,  
6 and we were in the transition to try and get there, and the real  
7 debate was, how do you manage the transition? The biggest myth  
8 out there is debating about -- you now, during when all this  
9 manipulation occurred, is it occurred in a deregulated  
10 environment. Nobody claimed we were in a deregulated. We were  
11 in transition to a deregulated environment.

12 There were those that argued that you needed to  
13 jump into the pool, with like the cold theory, you jump into the  
14 cold pool, and some that wanted to trickle in with their toes.

15 And the real issue never was, does deregulation  
16 work or not work, or whatever. It's how do you handle  
17 transition.

18 And you knew you were in a hybrid environment,  
19 and FERC made a commitment, Betsy Moler, directly to Pete  
20 Wilson: We will regulate the wholesale market during that  
21 period of transition.

22 We never got through the transition before the  
23 absolute rank and -- and I don't blame the generators. You're  
24 right. They have a fiduciary responsibility to maximize  
25 profit.

26 The FERC had a fiduciary responsibility to be the  
27 policeman, to be the referee. What they did is the equivalent  
28 of a soccer referee pointing out to a player that they had

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1 illegally scored a goal, but said, uh, we'll let this one go by.  
2 And eventually, the game gets out of hand, and it breaks down  
3 into a brawl.

4 And so, what ultimately happened is, the market  
5 rules, the so-called market rules and the game that was being

6 played here looked more like a World Wrestling Federation match  
7 than it did like a soccer match. And that's just the  
8 fundamental reality, because these guys had a script. And they  
9 were following it, just like a wrestling match.

10 DR. WOLAK: Just to say in response, the best  
11 response is still don't buy. And the way you send the signal  
12 not to buy is, you essentially send the price signal. And  
13 there's where you essentially reduce both how much you pay as a  
14 taxpayer, as well as how much you pay as ratepayer.

15 CHAIRMAN DUNN: Professor, I want to bring us to  
16 a close, but I've got just a couple questions left. I know  
17 every time I've said that, it's gone on for another hour, and I  
18 don't think these will.

19 I believe somewhere along the process, you or the  
20 Market Surveillance Committee has made some estimate, or if not,  
21 do you have an estimate of what the total cost of wholesale  
22 electricity is going to be in the State of California this year,  
23 2001?

24 DR. WOLAK: Well, I guess the difficult part is  
25 the fact of how much is sort of the net short. That depends on  
26 a whole lot of things.

27 But I think a safer number would be a sort of an  
28 estimate of the average price. Looking at, say, Palo Verde

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1 prices, which are prices that are currently trading on the IMEX  
2 market, as well as sort of average prices thus far for the year,  
3 I mean, a price in excess of, for the year, averaged to \$300 is,  
4 I think, a very conservative estimate of the average price for  
5 the year, given that right now, forward market price for peak  
6 power delivery between 6:00 a.m. and 10:00 a.m. coming on the  
7 Palo Verde forward market is on the order of \$680.

8 So, you sort of -- I think 300 is quite

9 conservative in germs of what the number is. And that's  
10 relative to say on the order of \$100 last year, and \$30 in '99.

11 So, and if you look at the sort of the cost under  
12 lying that, it's hard to see how the cost have up anywhere of  
13 that magnitude.

14 CHAIRMAN DUNN: Can you give me a total figure  
15 estimate?

16 DR. WOLAK: Well, as I say, the difficult part is  
17 the sort of what the net short is. And to the extent to which,  
18 you know, how large that is. But I would say anywhere between,  
19 say, you know, 40 and 70 billion dollars, and there's lots of  
20 leeway in there in terms of where it'll go. I mean, there's  
21 just a lot of uncertainty.

22 I hope that FERC realizes that that's not good  
23 for anybody.

24 CHAIRMAN DUNN: I want to touch upon one thing  
25 just for summary purposes.

26 I believe much earlier this afternoon you made  
27 mention that if there was one thing that this committee could do  
28 to determine whether, in fact, the behavior on the wholesale

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1 electricity market moved towards the end of just outright anti-  
2 trust behavior, it would be to examine the behavior of the  
3 players and their affiliates, including gas affiliates, as a  
4 whole, as opposed to viewing them in isolation.

5 Is my recollection of that correct?

6 DR. WOLAK: Yeah, very much. I mean, that's how,  
7 I think, FERC manages to not see things, is that if you look  
8 simply at one firm, then it's very easy, as we said, as given  
9 what I do with my affiliates, to make myself look very, very  
10 attractive from the FERC perspective.

11 But you have to look at the entire company, is

12 really the fundamental issue, because -- if FERC says it's only  
13 going to look at this one company, then it's very easy through  
14 affiliate transactions to do the sorts of things to make that  
15 company look very, very much the way FERC would like them to  
16 look.

17 CHAIRMAN DUNN: Including the gas component?

18 DR. WOLAK: Yes. I mean, I think it's key with  
19 the gas, because of the fact that we don't, as Senator Peace  
20 emphasized, have a liquid and transparent PX-like object for  
21 gas. We simply rely on the generator or market participants self  
22 reports for what the price of gas is transacting at.

23 And moreover, if I know that FERC is going to  
24 look at those reports and say, that is a valid price, then what  
25 incentive do I have to report the actual transaction price to  
26 the person that's surveying me here, or whoever is collecting  
27 this information.

28 That's the beauty of a market like the PX, is  
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1 that is a price that is actually being cleared by anonymous  
2 buyers and sellers, done by market makers, so you can at least  
3 say, look, that's what these guys were paid. And you have  
4 independent verification that that's what they received.

5 Whereas, in the gas side what's announced may not  
6 necessarily be equal to what is exactly the transaction price.  
7 And moreover, there may be side deals that you're not aware of.  
8 I mean, these are very common in all industries, where the list  
9 price, or the transaction price, is really not the actual price  
10 that was paid. There were all sorts of incentive deals, as well  
11 as other arrangements. And unless you get those, you really  
12 don't get the complete picture.

13 CHAIRMAN DUNN: Out of curiosity, how does the  
14 gas price in California right now compare to other areas of the

15 country?

16 DR. WOLAK: It's much, much higher. I mean, the  
17 most amazing thing is, if what you do is you started from the  
18 start of the market to roughly December 8th, 2000. And the  
19 reason December 8th is the day to remember is because that's the  
20 date that the FERC soft cap was implemented.

21 And if you take the average basis differential,  
22 which is essentially the difference between the price at Henry  
23 Hub in Louisiana and locations in California, say, Topok and the  
24 other delivery points in California, that average difference was  
25 less than 50 cents. And 50 cents is the regulated  
26 transportation cost that FERC sets.

27 Now, if you go from December 8th, 2000, to the  
28 present, or roughly, I think when I stopped was roughly in the  
16

1 middle of February, if you take the average differential between  
2 December 8th to the middle of February, the average price  
3 difference between Henry Hub and California is on the order of  
4 \$8. And the price of gas at Henry Hub is roughly averaged about  
5 \$6. So, you know, we're paying almost double the price that  
6 they're paying for gas. That's, I think, in large measure due  
7 to the FERC soft cap. The price of gas becomes this transfer  
8 price.

9 And we don't know what prices people really are  
10 paying. And the only way you'd find that out is go from well  
11 head to burn, and see where it's going.

12 CHAIRMAN DUNN: To your knowledge, Professor, has  
13 any entity, regulatory body or otherwise, done that sort of  
14 bigger picture analysis of the behavior of a given company and  
15 all of its affiliates, including gas? Has that analysis been  
16 done, to your knowledge, by anyone?

17 DR. WOLAK: The only one that would have the



18 ability to get that information is FERC, and no. Not that I'm  
19 aware of that they've done it.

20 CHAIRMAN DUNN: Has there been any request by  
21 anyone at FERC? Requests to FERC?

22 DR. WOLAK: Yes, from my understanding, the CPUC  
23 has been pushing them for years to do such a study, to look at  
24 what's going on with the gas price.

25 CHAIRMAN DUNN: I want to ask you a question, and  
26 I'm not going to throw a curve ball at you. I'm going to tell  
27 you exactly where I'm coming from

28 After I ask the question to you, if you prefer  
16

1 not to answer, don't worry, I won't push you on it. Others may  
2 push you on it.

3 This great debate, where are we as far as the  
4 behavior we find in the California wholesale electricity market,  
5 is it just acceptable conduct in a competitive market at one  
6 end, or is it anti-trust behavior at the other end of the  
7 spectrum? Where do we sit, which is exactly what this committee  
8 wants to investigate.

9 In California, if we look at the California anti-  
10 trust side of it, it's in the Business and Profession Codes. I  
11 just want to read you one sentence from that, and listen, if you  
12 would. Obviously, trusts are prohibited in California, like  
13 every state, both state and federal law declares them to be  
14 unlawful, against public policy, et cetera.

15 Another section defines trust under California  
16 law. Basically, I just want to read one part of it to you.  
17 "Combination of acts by two or more entities to increase the  
18 price of a commodity."

19 Given that, what I just read, but of course,  
20 putting your definitions in there, did that occur in the

21 California wholesale electricity market?

22 DR. WOLAK: I guess I can't say yes; I can't say  
23 no. I mean, there's a lot of things that look sort of puzzling  
24 to the observer. And I guess it's sort of, as I said, the sort  
25 of the information that we discussed would be definitely a first  
26 step in the sorts of analyses that I suggested to be done with,  
27 you know, how hard the plants were pushed in 2000 to '94; which  
28 of the forced outage rates look like those sorts of things, 16

1 would the the sorts of things that would push me towards more of  
2 saying, boy, the preponderance of evidence.

3 But I think that short of -- it's hard without  
4 further information and analysis to say definitively. But  
5 certainly, there's lots of things that cause you to sort of say,  
6 it's at least worth looking at.

7 I guess that's the way I would say it. I mean,  
8 that would be my advice to FERC, is: look, you may not find  
9 anything, but at least I think it's good to essentially  
10 investigate, because one of the certainly things that happens, I  
11 think, is when sunshine is put on some action, things tend to  
12 change.

13 CHAIRMAN DUNN: Ignoring if we actually find that  
14 there's evidence that reaches that end of the continuum, and I  
15 know you talked about the conservation side with Senator  
16 Johannessen and Senator Peace, from your tracking of the  
17 wholesale electricity market in California, and your position on  
18 the Market Surveillance Committee, are there other legislative  
19 recommendations you would make to this committee about  
20 correcting the behavior on the wholesale electricity market?

21 DR. WOLAK: Is he tired yet?

22 CHAIRMAN DUNN: We'll bound and gag him. He  
23 wants to ask, are you tired yet.

24 DR. WOLAK: No, no, I'm ready to go, no problem  
25 I guess for me, it's -- biggest side is, it just  
26 goes back to, I guess, the line that I said, let's let Enron  
27 work for us as opposed to against us. In other words, let's  
28 open up the distribution side to be open access and regulated,  
17

1 just like transmission is, and let's create a competitive retail  
2 market. And if we create a competitive retail market, then we  
3 have people competing to supply customers that will have a  
4 strong financial interest in keeping prices down, because that's  
5 how will they attract customers.

6 The other is really, I think, at least I hope,  
7 from what I got from what Senator Peace said, is that you really  
8 can't have a functioning retail market without the fact that  
9 people are able to see and benefit from the price signal.

10 Now, they can opt out of the price signal by  
11 essentially saying, I would prefer to purchase a forward  
12 contract. But just like with your cellular provider or with  
13 your airline, you essentially say, I plan in advance to get a  
14 low price, and if I come in the spot market, I don't get it.

15 CHAIRMAN DUNN: If I can interrupt, Professor.  
16 And I know this has already been talked about.

17 My real question is, anything different than  
18 that, that's already been talked about?

19 DR. WOLAK: I guess to me the issue is, in some  
20 sense where I think legislative action can be very beneficial is  
21 the sense in which is making it -- giving generators a lot of  
22 certainty about the cost and time to build new capacity in  
23 California. Because, as we talked about, the nature of the  
24 competition in this market is the fact that the outside option  
25 only becomes credible to the extent to which I can credibly say,  
26 look, in two years, I can put a plant in the ground if you don't

27 supply me power at this price, existing generator at this price.  
 28 So, the extent to which you can shrink the time  
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1 necessary to get capacity into the market is the extent to  
 2 which, if you like, you're giving that benefit to the existing  
 3 incumbent firms in the market.

4 I guess the way I think about it, once again from  
 5 an incentive perspective, is: to lawyers and consultants in  
 6 power plant siting, delay is billable hours. So, the only  
 7 person that has a financial incentive in reducing that length of  
 8 time is the generator that want to site. I think we, as public  
 9 policy, need to recognize that and to say, look, just like with  
 10 my students. I give them a deadline on their paper. I think  
 11 it's the same sort of thing with the power plant. You say,  
 12 look, it's six months up or out, or whatever, you know,  
 13 certainty, and cost certainty as well in terms of siting.

14 And I think you'll see that generators will want  
 15 to come to California, will want to build, and the sorts of  
 16 things that you want to have happen will happen.

17 But I guess, then, the other side, I think, is  
 18 just the issue of a fundamental -- there's two fundamental  
 19 problems that I think plague all markets that I think are  
 20 certainly of interest, is this verifiable forced outage problem,  
 21 of the sense that I think this is places where you can -- you  
 22 know, legislation in the form of, look, you know, we will  
 23 monitor this. We will watch this. True, we recognize that it's  
 24 fundamentally unverifiable, but at least shining the light on,  
 25 releasing the information, making sure that there may be  
 26 penalties associated with, look, your forced outages were much,  
 27 much higher. There's a cost to incurring that many forced  
 28 outages, and, you know, those sorts of things.

1                   But perhaps those are things more at the FERC  
2 level, but I think that sort of a public safety standard in  
3 California can help you to get a handle on that.

4                   But short that, I guess, the biggest thing to me  
5 is just, I think, we sort of have -- we can't underestimate the  
6 power of the demand. I think that's really the solution.

7                   CHAIRMAN DUNN: Which we already talked about.

8                   I've got one procedural area I want to explore  
9 real quickly, unless there are other questions by any of the  
10 committee members.

11                  SENATOR PEACE: I was just going to suggest on  
12 the issue of energy, continued energy, I'm going to be Professor  
13 Wolak's worst nightmare and send my son over to his class. He's  
14 on campus with you right now. You think I'm bad.

15                  Then I'll let him lecture you on the intersection  
16 between political reality and economic theory.

17                  CHAIRMAN DUNN: Any other?

18                  Let me just ask one question. Professor, I  
19 understand that in your position with the Market Surveillance  
20 Committee, you are under certain confidentiality agreements,  
21 bound by certain confidentiality agreements. True?

22                  DR. WOLAK: Uh-huh, yes.

23                  CHAIRMAN DUNN: It's really a series of them; is  
24 that not correct?

25                  DR. WOLAK: Well, it's more just a long thing  
26 that I had to sign, as well as for the ISO as well as for the PX  
27 to gain access to the PX data. So, both of those.

28                  CHAIRMAN DUNN: As you can well imagine, this

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1 committee is very interested in gaining access to the  
2 information that may be covered by the confidentiality  
3 agreements so that we can actually examine and discuss that

4 information.

5 Are you aware of any process by which, for  
6 example, this committee can get access on that information that  
7 is covered by confidentiality agreements?

8 DR. WOLAK: I would sort of -- I know that the  
9 EOB, the Electricity Oversight Board, has access to it. I would  
10 guess to the extent, that would be one avenue.

11 I also think that the Department of Water  
12 Resources has access to the information as well.

13 So, both of those avenues seem open.

14 I mean, the difficulty is more just the fact that  
15 it's pretty daunting. I have roughly 40 gigabytes of ISO data  
16 on my work station. So, I mean, there's a lot of information, a  
17 lot of things going on. It's just sort of the process of  
18 organizing is rather daunting. So, that I would only warn you  
19 of, but I think the access is fairly straight forward through  
20 those two avenues.

21 CHAIRMAN DUNN: DWR, and the other one was?

22 DR. WOLAK: Electricity Oversight Board.

23 CHAIRMAN DUNN: EOB, okay.

24 Any other questions from the committee?

25 Hearing none, Professor, thank you. It was a  
26 very long afternoon and well into the evening. We appreciate  
27 your patience very much and your testimony.

28 Dr. Hildebrandt, thank you for your patience as  
17

1 well. I'm sure you're looking forward with great anticipation  
2 to our next hearing, which we will schedule as quickly as  
3 possible and give notice.

4 This hearing is adjourned.

5 [Thereupon this portion of the

6 Senate Select Committee hearing

7 was terminated at approximately.  
8 6: 52 P. M ]

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1 CERTIFICATE OF SHORTHAND REPORTER

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3 I, EVELYN J. MIZAK, a Shorthand Reporter of the State  
4 of California, do hereby certify:

5 That I am a disinterested person herein; that the  
6 foregoing transcript of the Senate Select Committee hearing was  
7 reported verbatim in shorthand by me, Evelyn J. Mizak, and  
8 thereafter transcribed into typewriting.

9 I further certify that I am not of counsel or

10 attorney for any of the parties to said hearing, nor in any way  
11 interested in the outcome of said hearing.

12 IN WITNESS WHEREOF, I have hereunto set my hand this  
13 \_\_\_\_\_ day of \_\_\_\_\_, 2001.

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EVELYN J. MIZAK  
Shorthand Reporter

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